



ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R09-OAR-2014-0636; FRL-9951-42-Region 9]

Approval and Promulgation of Air Quality State Implementation Plans; California; San Joaquin Valley; Moderate Area Plan for the 2006 PM_{2.5} NAAQS

AGENCY: U.S. Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is approving elements of the state implementation plan revisions (SIP) submitted by California to address Clean Air Act requirements for the 2006 fine particulate matter (PM_{2.5}) National Ambient Air Quality Standards in the San Joaquin Valley Moderate PM_{2.5} nonattainment area. These SIP revisions are the 2012 PM_{2.5} Plan, submitted March 4, 2013, the 2014 Supplement, submitted November 6, 2014, and the motor vehicle emission budgets for the 2006 PM_{2.5} NAAQS submitted November 13, 2015. The EPA is disapproving interpollutant trading ratios identified in the SIP submission for nonattainment new source review permitting purposes because the ratios are not supported by a sufficient technical demonstration.

DATES: This rule is effective on **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA-R09-OAR-2014-0636. All documents in the docket are listed on the <http://www.regulations.gov> web site. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by

statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available through <http://www.regulations.gov>, or please contact the person identified in the “For Further Information Contact” section for additional availability information.

FOR FURTHER INFORMATION CONTACT: Wienke Tax, EPA Region 9, (415) 947-4192, tax.wienke@epa.gov.

SUPPLEMENTARY INFORMATION: Throughout this document, “we,” “us” and “our” refer to the EPA.

TABLE OF CONTENTS

I. Background

II. Public Comments and the EPA's Responses

III. Final Action

IV. Statutory and Executive Order Reviews

I. Background

A. Proposed Action

On January 13, 2015, we proposed to approve SIP revisions submitted by California to address Clean Air Act (CAA or “the Act”) requirements for the 2006 primary and secondary 24-hour PM_{2.5} national ambient air quality standards (NAAQS or “standards”) in the San Joaquin Valley (SJV) PM_{2.5} nonattainment area.¹ These SIP revisions are the 2012 PM_{2.5} Plan, submitted March 4, 2013, and the “Supplemental Document, Clean Air Act Subpart 4: the 2012 PM_{2.5} Plan for the 2006 PM_{2.5} Standard, and District Rule 2201 (New and Modified Stationary Source Review)” (2014

¹ 80 FR 1816 (January 13, 2015).

Supplement), submitted November 6, 2014. We also proposed to approve, through parallel processing, the proposed motor vehicle emissions budgets (MVEBs) for the 2006 PM_{2.5} NAAQS submitted on November 6, 2014, which California submitted in final form on December 29, 2014, and the related trading mechanism for transportation conformity purposes. We refer to these submissions collectively herein as “the 2012 PM_{2.5} Plan” or simply “the Plan.”

The EPA proposed to approve the following elements of the 2012 PM_{2.5} Plan as satisfying applicable CAA requirements: (1) the 2007 base year emissions inventories, (2) the demonstration that attainment by the Moderate area attainment date of December 31, 2015 is impracticable, (3) the reasonably available control measures/reasonably available control technology (RACM/RACT) demonstration, (4) the reasonable further progress (RFP) demonstration, (5) the San Joaquin Valley Unified Air Pollution Control District’s (SJVUAPCD’s or “District’s”) commitments to adopt and implement specific rules and measures by specific dates, and (6) the 2014 and 2017 MVEBs for direct PM_{2.5} and oxides of nitrogen (NO_x). The EPA also proposed to determine that volatile organic compounds (VOC) emissions do not contribute significantly to ambient PM_{2.5} levels that exceed the 2006 PM_{2.5} NAAQS in the SJV but to find the State’s and District’s demonstration concerning ammonia emissions insufficient to rebut the regulatory presumption for ammonia.

The EPA proposed to disapprove interpollutant trading ratios identified in these SIP submittals for nonattainment new source review (NNSR) permitting purposes. Finally, the EPA proposed to reclassify the SJV area, including Indian country within it, as a Serious nonattainment area for the 2006 PM_{2.5} NAAQS, based on the EPA’s

determination that the area could not practicably attain these standards by the applicable Moderate area attainment date of December 31, 2015.

B. Final Reclassification of the SJV Area from Moderate to Serious for the 2006 PM_{2.5} NAAQS

On December 22, 2015, we finalized our January 13, 2015 proposal to reclassify the SJV area from Moderate to Serious for the 2006 PM_{2.5} NAAQS.² As a result of that action, by August 21, 2017, California is required to submit additional SIP revisions to satisfy the statutory requirements that apply to Serious PM_{2.5} nonattainment areas, including the requirements of subpart 4 of part D, title I of the Act. The Serious area plan must provide for attainment of the 2006 PM_{2.5} NAAQS in the SJV area as expeditiously as practicable, but no later than December 31, 2019, in accordance with the requirements of part D of title I of the Act.

C. Motor Vehicle Emissions Budgets in the 2012 PM_{2.5} Plan

As part of our January 13, 2015 proposed action, we proposed to approve the proposed 2014 and 2017 MVEBs for the 2006 PM_{2.5} NAAQS submitted by the California Air Resources Board (CARB) on November 6, 2014 with a request for parallel processing. CARB formally submitted the final budgets to the EPA on December 29, 2014.³ On April 1, 2016, we found the NO_x and direct PM_{2.5} budgets in the 2012 PM_{2.5} Plan and 2014 Supplement, as submitted December 29, 2014, to be adequate for conformity purposes.⁴ On November 13, 2015, CARB submitted a SIP revision to replace

² 81 FR 2993 (January 20, 2016) (final rule) and 81 FR 42263 (June 29, 2016) (correcting amendment).

³ Letter dated December 29, 2014, from Richard W. Corey, Executive Officer, CARB, to Jared Blumenfeld, Regional Administrator, EPA Region 9, with enclosures.

⁴ Letter dated April 1, 2016, from Deborah Jordan, Director, Air Division, EPA Region 9, to Richard W. Corey, Executive Officer, CARB, and 81 FR 22194 (April 15, 2016).

several previously-submitted MVEBs developed using EMFAC2011 with revised MVEBs developed using EMFAC2014.⁵

On May 18, 2016, we proposed to approve the revised MVEBs submitted on November 13, 2015, which address the 1997 8-hour ozone standards, the 2006 PM_{2.5} standards, and the 1987 coarse particulate matter (PM₁₀) standard for the SJV area.⁶ We received no public comments on this proposal. Today, we are finalizing action only on the revised 2017 MVEBs addressing the 2006 PM_{2.5} NAAQS in the SJV, as submitted November 13, 2015.⁷ These NO_x and direct PM_{2.5} budgets were revised using EMFAC2014, the most recent version of California’s motor vehicle emission factor model approved by the EPA for use in SIPs and conformity analyses.⁸ The revised budgets, presented in Table 1 below, were developed in consultation with the SJVUAPCD, the eight SJV metropolitan planning organizations (MPOs), the EPA and CARB. These budgets replace the NO_x and direct PM_{2.5} budgets submitted on December 29, 2014.

Table 1. San Joaquin Valley Revised Budgets Developed Using EMFAC2014

County	2017 [tons per winter day]	
	PM_{2.5}	NO_x
Fresno	1.0	32.1
Kern (SJV)	0.8	28.8
Kings	0.2	5.9
Madera	0.2	6.0
Merced	0.3	11.0
San Joaquin	0.6	15.5

⁵ Letter dated November 13, 2015, from Richard W. Corey, Executive Officer, CARB, to Jared Blumenfeld, Regional Administrator, EPA Region 9, with enclosures.

⁶ 81 FR 31212 (May 18, 2016).

⁷ The EPA took final action on the revised ozone and PM₁₀ budgets at 81 FR 53294 (August 12, 2016). Although the 2012 PM_{2.5} Plan contained MVEBs for both 2014 and 2017, MVEBs for 2014 are no longer relevant for conformity analyses since that year has passed.

⁸ 80 FR 77337 (December 14, 2015).

Stanislaus	0.4	12.3
Tulare	0.4	11.2

Note: CARB calculated the revised PM_{2.5} budgets by taking the sum of the county-by-county emissions results from EMFAC and rounding the SJV-wide total up to the nearest whole ton for NO_x and to the nearest tenth of a ton for direct PM_{2.5}, then reallocating to the individual counties based on the ratio of each county's contribution to the total, and then rounding each county's emissions to the nearest tenth of a ton using the conventional rounding method. The existing adequate PM_{2.5} budgets submitted December 29, 2014 were calculated in the same manner.

As part of our January 13, 2015 proposed action, the EPA also proposed to approve, in accordance with 40 CFR section 93.124, the trading mechanism as described on p. C-32 in Appendix C of the 2012 PM_{2.5} Plan as an enforceable component of the transportation conformity program for the SJV for the 2006 PM_{2.5} NAAQS, with the condition that trades are limited to substituting excess reductions in NO_x for increases in PM_{2.5}. This trading mechanism was not revised by the November 13, 2015 MVEB submittal.⁹ We are finalizing our proposal to approve the trading mechanism identified in the Plan for transportation conformity purposes.

The budgets that the EPA is approving herein relate to the 2006 PM_{2.5} NAAQS only, and our approval of them does not affect the status of the previously-approved MVEBs for the 1997 PM_{2.5} NAAQS and related trading mechanism, which remain in effect for that PM_{2.5} NAAQS.

II. Public Comments and the EPA's Responses

The EPA provided a 45-day period for the public to comment on our proposed rule. During this comment period, which ended on February 27, 2015, we received two sets of public comments, one from the SJVUAPCD and another from Earthjustice on

⁹ 81 FR 31212, 31218 (May 18, 2016).

behalf of the Central Valley Air Quality Coalition, Greenaction, the Association of Irrigated Residents, the Sierra Club – Tehipite Chapter, and Global Community Monitor (Earthjustice).¹⁰ Copies of these comment letters can be found in the docket.

In our December 22, 2015 final action to reclassify the SJV area as a “Serious” PM_{2.5} nonattainment area, we summarized and responded to public comments pertaining to the reclassification and its consequences and stated that we would, in a separate rulemaking, respond to comments pertaining to our proposed action on the submitted plan.¹¹ In our April 15, 2016 notice of adequacy, we responded to a public comment pertaining to the adequacy of the budgets.¹²

We summarize below and provide our responses to all remaining public comments on our proposed action on the 2012 PM_{2.5} Plan.

A. Comment Regarding Emissions Inventories

Comment 1: Earthjustice comments on the importance of emissions inventories, noting that CAA section 172(c)(3) requires that nonattainment plans “include a comprehensive, accurate, current inventory of actual emissions from all sources of the relevant pollutant or pollutants in such area” (emphasis by commenter). Earthjustice argues that the EPA’s proposed determination that the 2012 PM_{2.5} inventories “are based on the most current and accurate information available to the State and District at the time the Plan and its inventories were being developed,” does not satisfy the requirements of section 172(c)(3)

¹⁰ See letter dated February 27, 2015 from Sheraz Gill, Director of Strategies and Incentives at SJVAPCD, to Wienke Tax, EPA Region 9, “Re: Docket No. EPA-R09-OAR-2014-0636, Comments on Proposed Approval and Promulgation of Implementation Plans; Designation of Areas for Air Quality Planning Purposes; California; San Joaquin Valley Moderate Area Plan and Reclassification as Serious Nonattainment for the 2006 PM_{2.5} NAAQS,” and letter dated February 27, 2015 from Paul Cort and Adenike Adeyeye, Earthjustice, to Ms. Wienke Tax, Air Planning Office, EPA Region 9.

¹¹ 81 FR 2993 (January 20, 2016).

¹² 81 FR 22194 (April 15, 2016).

that the inventory be accurate and current. While acknowledging that it is unaware of information calling into question the inventories used in the Plan, Earthjustice asserts that the EPA must take further steps to confirm that the inventories “are” (i.e., remain) current and accurate before it approves the inventories. Citing *Sierra Club v. United States EPA*, 671 F.3d 955, 968 (9th Cir. 2012), Earthjustice states that the EPA’s failure to confirm that the inventories are current and accurate “undermines the rational basis for the approval.”

Response 1: The EPA does not dispute the importance of emissions inventories. We evaluated the emissions inventories in the 2012 PM_{2.5} Plan to determine whether they satisfy the requirements of CAA section 172(c)(3) and adequately support the Plan’s RACM, RFP, and impracticability demonstrations. Based on this evaluation, we have concluded that the Plan’s 2007 base year emissions inventory was based on the most current and accurate information available to the State and District at the time the Plan was developed and submitted, and that it comprehensively addresses all source categories in the SJV area, consistent with applicable CAA requirements and EPA guidance.¹³

CAA section 172(b) provides that a state containing a nonattainment area shall submit a plan or plan revision (including the plan items) meeting the applicable requirements of CAA section 172(c) and section 110 on the schedule established by the EPA. Section 172(c) contains, inter alia, the requirement that nonattainment area plans include a “comprehensive, accurate, current inventory” of actual emissions from all sources of the relevant pollutant or pollutants in the area. We believe it is reasonable to read these provisions together as requiring that the state submit an inventory that is

¹³ 80 FR 1816 at 1819–1820; *see also* “General Preamble for Implementation of Title I of the Clean Air Act Amendments of 1990,” 57 FR 13498, 13502 (April 16, 1992) (“General Preamble”).

comprehensive, accurate, and current at the time the state submitted it to the EPA, rather than requiring that the state continually revise its plan as new emissions data become available.¹⁴ Air quality planning is an iterative process and states and the EPA must rely on the best available data at the time the plans are created. Nothing in the *Sierra Club* decision cited by the commenters (671 F.3d 955, 9th Cir. 2012) compels the EPA to alter this longstanding interpretation of the CAA.¹⁵

B. Comments Regarding Precursors

Comment 2: The SJVUAPCD argues that ammonia is not a significant precursor for PM_{2.5} and that additional ammonia controls are not required. The District asserts that the EPA's proposal to reject these findings is based on "technical assertions not supported by the extensive scientific research and modeling" conducted for the Plan, and that the technical analyses in the Plan demonstrate that ammonia reductions are ineffective for attaining the PM_{2.5} NAAQS. Although the District recognizes that ammonia is an integral component of ammonium nitrate, which contributes substantially to wintertime PM_{2.5} mass in the SJV, it argues that its scientific evaluations in the Plan provide "sufficient substantiation that controls on ammonia are known to be very insensitive to reducing ammonium nitrate mass concentrations." The District also comments that the EPA did not provide references or support for statements in its technical support document that "a

¹⁴ EPA, Office of Transportation and Air Quality (OTAQ), "Policy Guidance on the Use of MOVES2010 for State Implementation Plan Development, Transportation Conformity, and Other Purposes," December 2009; *see also* Memorandum from John Seitz, EPA, Office of Air Quality Planning and Standards and Margo Oge, OTAQ, "Policy Guidance on the Use of MOBILE6 for SIP Development and Transportation Conformity," January 18, 2002.

¹⁵ In *Sierra Club v. EPA*, 671 F.3d 955 (9th Cir. 2012), the Ninth Circuit remanded the EPA's final action approving an ozone plan for the SJV on the ground that the EPA's failure to consider new inventory data submitted by CARB long before the EPA's action on the plan was arbitrary and capricious under the Administrative Procedure Act. *See* 671 F.3d at 966 ("EPA stands on shaky legal ground relying on significantly outdated data, given the amount of time that EMFAC2007 was available and authorized for use before the EPA approved the 2004 SIP"). The decision did not disturb the EPA's longstanding policy of requiring states to use the most current emissions estimate models available at the time of SIP development.

detailed evaluation of the modeling shows that ammonia controls can be effective at reducing ambient PM_{2.5} in some locations,” and that “[i]n the various studies, when ammonia emissions were reduced by up to 50 percent, ambient ammonium nitrate decreased by 5 to 25 percent, depending on the episode modeled and the geographic location evaluated.... These percentages for ammonia benefits are generally smaller than those for NO_x reductions, but these modeling results show that reductions in ammonia emissions under certain circumstances can effectively reduce ambient PM_{2.5}” (internal citations omitted). The District argues that these statements are contrary to the Plan’s Weight of Evidence Analysis in Appendix G of the 2012 PM_{2.5} Plan.

Response 2: We disagree with the District’s claim that we did not provide support for our conclusions about ammonia impacts in the SJV. As stated on pg. 56 of the EPA’s technical support document (TSD) for the proposed rule (hereafter “Proposal TSD”),¹⁶ the EPA’s conclusion that ammonia controls can be effective at reducing ambient PM_{2.5} in some locations in the SJV is based on (1) sensitivity to ammonia reductions in the air quality modeling and Weight of Evidence Analysis in the 2012 PM_{2.5} Plan, (2) a number of peer-reviewed journal papers cited in the Plan showing ammonium nitrate reductions of up to 25 percent when ammonia emissions are reduced by 50 percent, and (3) the severity of PM_{2.5} nonattainment in the area.¹⁷

Comment 3: The SJVUAPCD recognizes that ammonia is a large component of ammonium nitrate and that ammonium nitrate contributes substantially to wintertime

¹⁶ EPA, Region 9, Air Division, Technical Support Document, “Proposed Action on the San Joaquin Valley 2012 PM_{2.5} State Implementation Plan and 2014 Supplemental Document and Proposed Reclassification of the San Joaquin Valley as Serious Nonattainment for the 2006 PM_{2.5} Standard,” December 2014 [“Proposal TSD”].

¹⁷ *Id.* at p. 56.

PM_{2.5} mass, but asserts that this does not necessarily mean that reductions in ammonia emissions are effective in reducing PM_{2.5} concentrations in the SJV. Similarly, the District acknowledges that ammonia is found in the SJV at higher wintertime concentrations than NO_x but states that ammonia's physical abundance does not solely determine its significance as a precursor. The District cites language in the EPA's Proposal TSD stating that the EPA reviews a determination to exclude a PM_{2.5} precursor by considering both "the magnitude of the precursor's contribution to ambient PM_{2.5} concentrations" and "the sensitivity of ambient PM_{2.5} concentrations in the area to reductions in emissions of that precursor." The District interprets this language to establish two necessary elements for precursor significance: (1) a "relatively high contribution" to overall PM_{2.5} mass, and (2) availability of control mechanisms for the precursor that demonstrate a "reasonable rather than negligible" reduction in PM_{2.5} mass. The District asserts that PM_{2.5} concentrations in the SJV are highly insensitive to ammonia controls, particularly when compared to alternative controls on NO_x, which it claims is the limiting precursor for ammonia nitrate formation. While the District agrees with the EPA that the decision of whether to require reductions of a precursor should not be based solely on the control effectiveness of the precursor relative to other precursors, the District comments that an "additional key issue that must also be taken under consideration is the development and implementation of effective emission reductions strategies for reducing ambient PM_{2.5} and bringing the [SJV] into attainment."

Response 3: The EPA generally agrees with the District's statement that both the contribution of a precursor to PM_{2.5} concentrations in the area and the area's sensitivity to reductions in emissions of the precursor may be relevant for assessing the level of

contribution of a PM_{2.5} precursor to ambient PM_{2.5} levels. The EPA also agrees with the District's conclusion that ambient PM_{2.5} concentrations are more sensitive to NOx emission reductions than to ammonia emission reductions. We disagree, however, with the District's suggestion that the effectiveness of reductions of a particular precursor in improving PM_{2.5} air quality relative to a different precursor may support a conclusion that a given precursor does not contribute significantly to ambient PM_{2.5} levels that exceed the NAAQS. We also disagree with the District's suggestion that the "availability of control mechanisms for the precursor that demonstrate a 'reasonable rather than negligible' reduction in PM_{2.5} mass" is a necessary consideration in determining whether a particular PM_{2.5} precursor is subject to control evaluation under subpart 4.

As explained in our proposed rule, ammonia is a precursor to the formation of PM_{2.5} and is, therefore, presumptively regulated under subpart 4 of part D, title I of the Act.¹⁸ Thus, CARB and the District must evaluate ammonia emissions for potential controls unless the State submits a demonstration adequate to rebut the regulatory presumption in the SJV area. The pertinent question in a demonstration to rebut the regulatory presumption for ammonia is whether ammonia emission sources "contribute significantly" to PM_{2.5} levels that exceed the PM_{2.5} NAAQS in the SJV, not whether existing emission control measures can achieve a specified amount of emission reductions in the area or how effective ammonia reductions are compared to reductions of other PM_{2.5} precursors.¹⁹ More specifically, with respect to the sensitivity-based contribution analysis, the pertinent question is whether PM_{2.5} concentrations in the

¹⁸ 80 FR 1816, 1821 (January 13, 2015) (citing *NRDC v. EPA*, 706 F.3d 428 (D.C. Cir. 2013)).

¹⁹ CAA section 189(e).

nonattainment area are “insensitive” to emissions reductions of the precursor.²⁰ We note that the EPA may, in some cases, require a state to identify and evaluate potential control measures to reduce emissions of a particular PM_{2.5} precursor from existing sources *as part of* a sensitivity-based contribution analysis, *i.e.*, in order to adequately demonstrate that regulation of the precursor would not provide meaningful improvements in ambient air quality.²¹

Given the severity of PM_{2.5} nonattainment in the SJV area, the ambient contribution of ammonia emissions, the area’s demonstrated sensitivity to ammonia control,²² and our finding that the precursor demonstration in the Plan is insufficient to rebut the regulatory presumption for ammonia, we conclude that ammonia emissions contribute significantly to ambient PM_{2.5} levels that exceed the PM_{2.5} NAAQS in the SJV area and that the 2012 PM_{2.5} Plan must, therefore, contain an evaluation of potential ammonia controls.

Comment 4: Earthjustice challenges the EPA’s method for identifying PM_{2.5} precursors subject to regulation by the Plan. Specifically, Earthjustice objects to the EPA’s consideration of “both the magnitude of the precursor’s contribution to ambient PM_{2.5} concentrations in the nonattainment areas and the sensitivity of ambient PM_{2.5}

²⁰ See EPA, Final Rule, “Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements,” July 29, 2016 (pre-publication notice) at Section III.C.3.d, pp. 50-54 (discussing technical issues associated with sensitivity-based contribution analysis).

²¹ See EPA, Final Rule, “Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements,” July 29, 2016 (pre-publication notice) at 40 CFR 51.1009(a)(2)(ii). Although this regulatory text is not yet effective, it reflects the EPA’s interpretation of the statutory requirements. See also EPA, Response to Comments on the Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements, July 29, 2016, at p. 23 (noting that “while a valid sensitivity-based precursor demonstration generally will not require an evaluation of available controls, the EPA may determine, based on the facts and circumstances of the area, that the state needs to conduct a control measure evaluation for the relevant precursor to adequately demonstrate that regulation of the precursor would not provide meaningful reductions in ambient air quality”).

²² Proposal TSD at p. 57; see also 80 FR 1816, 1825 (January 13, 2015).

concentrations in the area to reductions in emissions of that precursor.” Earthjustice argues that this language differs from CAA section 189(e), which provides that control requirements shall apply to major stationary sources of particulate matter (PM) precursors unless the EPA finds that these sources “do not contribute significantly to PM-10 levels which exceed the standard in the area.” Thus, according to Earthjustice, “the statute allows for consideration only of the significance of the contribution” and does not allow for consideration of the effectiveness of controls in determining whether a precursor must be subject to control.

Earthjustice also characterizes the EPA’s consideration of the sensitivity of ambient concentrations to precursor emissions reductions as a “bad” policy assessment and argues that “looking merely at the sensitivity ratios ignores the fact that pollutants like ammonia have been historically under-regulated and very well may represent the cheapest opportunities for emission reductions.” Earthjustice argues that even if much larger amounts of ammonia reductions would be required to achieve the benefits of a few tons of NO_x reductions, ammonia controls may still be the “best” policy option because incremental NO_x emissions, which have already been heavily regulated, may be much more expensive. Earthjustice claims that the EPA’s sensitivity test is a policy-based test but that it is not a rational policy test, because it does not consider the full regulatory context. According to Earthjustice, “decisions on how to balance controls on sources of ammonia versus sources of NO_x are for the control strategy of the Plan,” and that if additional reductions beyond those achieved through the required RACM or BACM controls are necessary, “that is where the ‘effectiveness’ of the controls can and should be

considered – not in the determination of whether a pollutant is a precursor subject to control under the Act.”

Earthjustice states that the EPA has correctly proposed to determine that ammonia emissions “contribute significantly” to PM_{2.5} nonattainment in the SJV given that ammonium nitrate is the largest component of the Valley’s PM_{2.5} levels. Thus, according to Earthjustice, ammonia controls are mandated under CAA section 189(e) regardless of the relative sensitivity of ambient concentrations to emission reductions.

Response 4: We disagree with the commenter’s characterization of the legal test for determining whether or not a particular PM_{2.5} precursor must be subject to control evaluation. With respect to ammonia emissions, however, this issue does not affect our action on the 2012 PM_{2.5} Plan because the EPA is not determining that ammonia emission sources “do not contribute significantly” to PM_{2.5} levels that exceed the 2006 PM_{2.5} NAAQS in the SJV area. Instead, the EPA has concluded that the State’s and District’s demonstration concerning ammonia emissions in the 2012 PM_{2.5} Plan and 2014 Supplement is insufficient to rebut the regulatory presumption under subpart 4 and that ammonia is, therefore, a PM_{2.5} precursor subject to control evaluation for purposes of attaining the 2006 PM_{2.5} NAAQS in the SJV.

As explained in our proposed rule, section 189(e) of the Act requires that the control requirements for major stationary sources of direct PM₁₀ also apply to major stationary sources of PM₁₀ precursors, except where the Administrator determines that such sources do not contribute significantly to PM₁₀ levels that exceed the standard in the area. Section 189(e) contains the only express exception to the control requirements under subpart 4 (e.g., requirements for RACM and RACT, best available control

measures (BACM) and best available control technology (BACT), most stringent measures, and NSR) for sources of direct PM_{2.5} and PM_{2.5} precursor emissions. Although section 189(e) explicitly addresses only major stationary sources, the EPA interprets the Act as authorizing it also to determine, under appropriate circumstances, that regulation of specific PM_{2.5} precursors from other source categories in a given nonattainment area is not necessary. For example, under the EPA's longstanding interpretation of the control requirements that apply to stationary, area, and mobile sources of PM₁₀ precursors area-wide under CAA section 172(c)(1) and subpart 4 (*see* General Preamble, 57 FR 13498 at 13539-42), a state may demonstrate in a SIP submittal that control of a certain precursor pollutant is not necessary in light of its insignificant contribution to PM₁₀ levels in the nonattainment area.²³

We evaluated the SJV PM_{2.5} Plan in accordance with the presumption embodied within subpart 4 that all PM_{2.5} precursors must be addressed in the state's evaluation of potential control measures, unless the state adequately demonstrates that emissions of a particular precursor do not "contribute significantly" to ambient PM_{2.5} levels that exceed the PM_{2.5} NAAQS in the nonattainment area. Both the magnitude of a precursor's contribution to ambient PM_{2.5} concentrations in the nonattainment area and the sensitivity of ambient PM_{2.5} concentrations in the area to reductions in emissions of that precursor may be relevant to an assessment of whether the precursor contributes significantly to ambient PM_{2.5} levels that exceed the PM_{2.5} NAAQS in the area. As explained in the preamble to the EPA's July 29, 2016 final rule to implement the PM_{2.5} NAAQS:

²³ 80 FR 1816, 1821-1822 (January 13, 2015). Courts have upheld this approach to the requirements of subpart 4 for PM₁₀. *See, e.g., Assoc. of Irrigated Residents v. EPA, et al.*, 423 F.3d 989, 997 (9th Cir. 2005) (noting discretion vested in the EPA to consider various factors in determining whether a precursor "contributes significantly" to PM₁₀ levels).

The EPA ... believes that a sensitivity-based contribution analysis is consistent with the language and intent of CAA section 189(e). As applied to attainment plans, CAA section 189(e) allows states to evaluate whether PM_{2.5} precursors significantly contribute to levels which exceed the standard in the area. The intent of CAA section 189(e) in applying control requirements to PM_{2.5} precursors is to ensure expeditious attainment of the standard. However, if conditions in a particular area are such that control of sources of one or more precursors does not reduce PM_{2.5} concentrations in the area, then those controls will not help the area attain (expeditiously or otherwise). Therefore, the EPA disagrees with commenters who argue that sensitivity-based contribution analyses are not appropriate for determining if precursors do not significantly contribute to PM_{2.5} levels in the area. The EPA believes that sensitivity-based contribution analyses can be useful for determining whether adoption of control requirements for sources of a particular precursor would be effective in reducing PM_{2.5} concentrations, and can be useful for determining whether potential emissions increases under the NNSR program would lead to insignificant air quality changes. For this reason, the final rule allows states to conduct sensitivity-based contribution analyses for the comprehensive, major stationary source, and NNSR precursor demonstrations.²⁴

Based on our evaluation of the precursor demonstrations in the 2012 PM_{2.5} Plan, we agree with Earthjustice's claim that ammonia emission sources "contribute significantly" to PM_{2.5} levels that exceed the PM_{2.5} NAAQS in the SJV and that an

²⁴ EPA, Final Rule, "Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements," July 29, 2016 (pre-publication notice) at Section III.C, p. 59.

ammonia control evaluation is therefore necessary to satisfy the requirements of the Act for the 2006 PM_{2.5} NAAQS. For the reasons provided in our proposed rule, however, we conclude that VOC emissions do not “contribute significantly” to ambient PM_{2.5} levels that exceed the 2006 PM_{2.5} NAAQS in the SJV area and that a VOC control evaluation therefore is not necessary in this Plan. As the commenter has not raised any specific concern regarding our proposal on VOC emissions, we are not addressing these issues further with respect to VOCs.

Comment 5: The District states that it is important to acknowledge the public health co-benefits of reducing NO_x emissions in the region. The District states that ozone production in the SJV is limited by NO_x concentrations relative to VOC concentrations, and that NO_x reductions typically involve the elimination, reduction, and/or control of hydrocarbon combustion sources, and produce net reductions in direct particulates, metals, organic carbon, elemental carbon, and hazardous air pollutants. The District asserts that reductions in secondary ammonium nitrate are not accompanied by these additional co-benefits.

Response 5: We agree with the commenter that it is important to reduce NO_x emissions for improved public health in the San Joaquin Valley, because it is a precursor to both PM_{2.5} and ozone. As to the air quality benefits of reductions in secondary ammonium nitrate, theoretically these air quality benefits could be achieved by reductions in either NO_x emissions or ammonia emissions. Reductions in secondary ammonium nitrate through NO_x control would achieve the co-benefits identified by the commenter. Given that there is no atmospheric chemistry connection between ammonia emissions and ozone production, we agree with the commenter that ammonia

reductions would not achieve the same co-benefits with respect to ozone that NO_x reductions achieve. Ammonia reductions may, however, achieve other air quality co-benefits depending on the specifics of the ammonia controls, which are not explored in the Plan but may be uncovered by additional analysis. In any case, this issue does not affect our conclusion that ammonia is a PM_{2.5} precursor subject to control evaluation for purposes of the 2006 PM_{2.5} NAAQS in the SJV.

C. Comments Regarding RACM/RACT and Adopted Control Strategy

Comment 6: Earthjustice argues that the EPA should disapprove the Plan's RACM/RACT demonstration because it does not include all reasonably available control measures. Earthjustice asserts that the EPA's review of this demonstration in its proposed rule "does little more than rubberstamp the District's unsupported assertions" that all reasonable controls have been exhausted, and identifies six source categories for which it claims that existing control measures could reasonably be strengthened or other reasonable new control measures have yet to be adopted and implemented.

Response 6: We disagree with these arguments. Section 107(a) of the CAA provides states with both authority and primary responsibility for developing SIPs that meet applicable statutory and regulatory requirements for attaining, maintaining, and enforcing the NAAQS. States have discretion in formulating their SIPs, and the EPA is required to approve a SIP submission that satisfies the applicable requirements of the Act.²⁵

As explained in our proposed rule, the 2012 PM_{2.5} Plan discusses the District's process for evaluating potential RACM/RACT in accordance with the EPA's recommendations in the General Preamble and describes each of the control measures for

²⁵ CAA section 110(k)(3), 42 U.S.C. 7410(k)(3) and 40 CFR 52.02(a); *see also Union Elec. Co. v. EPA*, 427 U.S. 246, 250 (1976); *Train v. Natural Res. Def. Council*, 421 U.S. 60, 79 (1975).

sources of direct PM_{2.5}, NO_x, SO₂, and ammonia that the Plan relies on to satisfy the RACM/RACT requirement for the 2006 PM_{2.5} NAAQS.²⁶ For the reasons provided in our proposed rule and further below, we conclude that the 2012 PM_{2.5} Plan provides for the implementation of all RACM/RACT that could reasonably be implemented in the SJV by the statutory implementation deadline, as required by CAA sections 172(c) and 189(a)(1)(C).

We note that, as of the date of our proposed action on the 2012 PM_{2.5} Plan and 2014 Supplement, which published on January 13, 2015, it was not practicable for the state to adopt additional control measures for implementation by the RACM implementation deadline under CAA section 189(a)(1)(C), which was December 14, 2013.²⁷ The State and District must, however, include in the Serious area plan for the 2006 PM_{2.5} NAAQS, which is due August 21, 2017, provisions to assure that the best available control measures (BACM) for the control of PM_{2.5} and PM_{2.5} precursors shall be implemented no later than 4 years after the date the area was reclassified as a Serious area, *i.e.*, by February 19, 2020.²⁸ The required evaluation of BACM/BACT control measures in the Serious area plan must address sources of direct PM_{2.5} and all PM_{2.5} precursors, except for any PM_{2.5} precursor(s) for which the State submits and the EPA approves a comprehensive precursor demonstration consistent with the requirements of subpart 4 of part D, title I of the Act. In accordance with the requirements of CAA

²⁶ 80 FR 1816, 1827-1830.

²⁷ The SJV area was designated nonattainment for the 2006 PM_{2.5} NAAQS effective December 14, 2009. 74 FR 58688 (November 13, 2009) and 40 CFR 81.305. Therefore, the statutory deadline for implementation of RACM in the SJV under CAA section 189(a)(1)(C) for this NAAQS was December 14, 2013.

²⁸ The EPA reclassified the SJV area as a Serious nonattainment area for the 2006 PM_{2.5} NAAQS effective February 19, 2016. 81 FR 2993 (January 20, 2016) (final reclassification) and 81 FR 42263 (June 29, 2016) (correcting amendment). Therefore, the statutory deadline for implementation of BACM in the SJV under CAA section 189(b)(1)(B) for this NAAQS is February 19, 2020.

section 172(c)(6), the Serious area plan must also include any additional feasible measures to control emissions of direct PM_{2.5} and PM_{2.5} precursors that are necessary or appropriate to provide for attainment of the 2006 PM_{2.5} NAAQS as expeditiously as practicable and no later than December 31, 2019.²⁹

We respond below to the specific comments pertaining to the six source categories highlighted by Earthjustice.

Comment 6a: Standards for Agricultural Equipment. Earthjustice asserts that the District's "replacement of more than 1,000 pieces of off-road equipment and agricultural equipment" through implementation of incentive programs has demonstrated the feasibility of emission controls on off-road agricultural equipment and argues that CARB has the ability to create binding, enforceable regulations to reduce NO_x emissions from off-road agricultural equipment to hasten attainment of the 2006 PM_{2.5} NAAQS in the SJV.

Response 6a: To the extent Earthjustice intended to argue that the replacement of off-road agricultural equipment through incentive programs implemented in the SJV demonstrates that NO_x controls for such equipment are both technologically and economically feasible, we disagree.

Given the commenter did not specify the types and/or sizes of off-road equipment for which it believes NO_x controls are feasible, we evaluated several types of off-road agricultural equipment replacement projects funded through the Carl Moyer Memorial Air Quality Standards Attainment Program in the SJV in recent years to determine the

²⁹ See EPA, Final Rule, "Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements," July 29, 2016 (pre-publication notice) at 40 CFR 51.1010(a)(4)(ii). Although this regulatory text is not yet effective, it reflects the EPA's interpretation of the statutory requirements.

costs and technical issues associated with such replacements. We used the SJVUAPCD’s “Annual Demonstration Report” data sheets for 2013,³⁰ 2014,³¹ and 2015,³² which the District submitted pursuant to SJVUAPCD Rule 9610, to determine the cost effectiveness and technological feasibility of off-road agricultural equipment replacements. We limited our analysis to projects categorized as “off-road” and as “vehicle replacements,” and that included data for “cost of new equip vehicle”³³ and non-zero emission reductions values reported for NO_x and/or particulate matter (PM).³⁴ Off-road agricultural equipment encompasses a wide variety of types of equipment. The 1807 pieces of equipment listed in the data sheets that we reviewed include: almond shakers, almond sweepers, backhoes, bale wagons, balers, bulk carriers, combines, cotton pickers, forage harvesters, forklifts, harvesters, hay haulers, loaders, silage baggers, sprayers, swathers, tomato harvesters, tractors, tractor crawlers, and wheel loaders. Additionally, as seen in Tables 2, 3, and 4 below, the data sheets identify a wide range of equipment horsepower levels and capital costs of replacing agricultural off-road equipment, from which the EPA calculated mean and median values and cost-effectiveness values for NO_x controls.³⁵

Table 2. Horsepower for Off-road Agricultural Equipment

	Horsepower (HP)	Project ID	Date of “Annual Demonstration Report” data sheet identifying project
--	--------------------	------------	--

³⁰ Available at <http://www.valleyair.org/MOP/docs/069610ProjectDataforPublicUNLOCKED-1-30-14.xlsx>.

³¹ Available at <http://www.valleyair.org/MOP/docs/9610ProjectDataforPublicUNLOCKED-8-11-14.xlsx>.

³² Available at <http://www.valleyair.org/MOP/docs/9610ProjectDataforPublic2015.xlsx>.

³³ We did not evaluate the 125 projects in the 2014 Data Sheet categorized as “off-road” and as “vehicle replacements” for which the Data Sheet identified “cost retrofit” instead of “cost of new equip vehicle” values.

³⁴ We did not evaluate the 29 projects in the 2013 Data Sheet categorized as “off-road” and as “vehicle replacements” for which the Data Sheet identified zero NO_x and PM emission reductions.

³⁵ We calculated the cost-effectiveness of NO_x controls by dividing the “Cost of New Equipment” values by the “NO_x Lifetime Reduced (tons)” values for each of the identified projects to obtain \$/ton values.

Minimum	28	C-21377-A	2014
Maximum	653	C-21973-A	2014
Mean	128	—	
Median	105	—	

Source: Minimum and maximum horsepower based on EPA review of SJVUAPCD, “Annual Demonstration Report” data sheets for 2013, 2014, and 2015. Mean and median values calculated by EPA.

Table 3. Cost of Off-road Agricultural Equipment

	Cost of New Equipment (\$)	Project ID	Date of “Annual Demonstration Report” data sheet identifying project
Minimum	10,031.50	C-22064-A	2014
Maximum	685,736.52	C-27498-A	2015
Mean	82,182.69	—	
Median	51,212.29	—	

Source: Minimum and maximum cost based on EPA review of SJVUAPCD, “Annual Demonstration Report” data sheets for 2013, 2014, and 2015. Mean and median values calculated by EPA.

Table 4. Cost Effectiveness of NO_x Control for Off-road Agricultural Equipment

	Cost Effectiveness (\$/ton)	Project ID	Date of “Annual Demonstration Report” data sheet identifying project
Minimum	1,141.00	C-8160A	2013
Maximum	436,140.00	C-22654-A	2014
Mean	38,687.61	—	
Median	18,863.95	—	

Source: EPA, “Agricultural Mobile Engine Projects - EPA cost-effectiveness calculations,” July 21, 2016.

The significant costs associated with replacing off-road agricultural equipment in the SJV indicate that replacement of such equipment without funding assistance generally is not economically feasible at this time. In addition, the wide variations in the sizes and uses of such equipment in the SJV and the available control technologies indicate that replacement of off-road agricultural equipment in the SJV may not be technically feasible for many types of equipment. Accordingly, we disagree with Earthjustice’s suggestion

that requirements to replace off-road agricultural equipment are required RACM in the SJV.

Comment 6b: Fleet Rules. Earthjustice comments that the District can further reduce emissions from mobile sources by adopting additional “fleet” rules to regulate emissions from publicly-owned vehicles. Earthjustice notes that while the District currently maintains a fleet rule only for school buses, the South Coast Air Quality Management District (SCAQMD) has adopted rules for buses; light-, medium-, and heavy-duty public fleet vehicles; waste collection vehicles; airport ground transportation such as taxis and shuttles; and street sweepers. Earthjustice states that the District should implement similar restrictions on publicly-owned vehicles.

Response 6b: We disagree with Earthjustice’s suggestion that adoption of additional “fleet” rules is necessary to satisfy the RACM/RACT requirement for the 2006 PM_{2.5} NAAQS in the SJV.

As the commenter notes, the SCAQMD has adopted several rules to encourage public agencies and some private entities to shift to the use of lower emissions vehicles,³⁶ including the following:

- Rule 1186.1 Less-Polluting Street Sweepers, adopted August 18, 2000;
- Rule 1191 Clean On-Road Light and Medium Duty Public Fleet Vehicles, adopted June 16, 2000;
- Rule 1192 Clean On-Road Transit Buses, adopted June 16, 2000;
- Rule 1193 Clean On-Road Residential and Commercial Refuse Collection Vehicles, adopted June 16, 2000.

³⁶ The applicability of these rules was narrowed to exclude federal fleets and certain private fleets. *See* http://www.aqmd.gov/docs/default-source/Regulations/Fleet-Rules/fleetruleadvisory-july202005.pdf?sfvrsn=0_

- Rule 1194 Commercial Airport Ground Access Vehicles, adopted August 18, 2000;
- Rule 1195 Clean On-Road School Buses, adopted April 20, 2001; and
- Rule 1196 Clean On-Road Heavy-Duty Public Fleet Vehicles, adopted October 20, 2000.

As explained in Appendix C of the 2012 PM_{2.5} Plan, both CARB and the SJVUAPCD have adopted fleet rules to reduce emissions from specific types of on-road vehicle fleets, *e.g.*, CARB's Fleet Rule for Public Agencies and Utilities, which addresses diesel particulate matter from vehicle fleets operated by public agencies and utilities, and SJVUAPCD Rule 9310 (School Bus Fleets), which requires replacement, retrofit, or repowering of older diesel-fueled school buses.³⁷ The District acknowledges in Appendix C of the Plan that the SCAQMD is implementing a fleet rule that requires solid waste collection vehicle fleets to operate entirely on alternative fuel beginning in 2011 but explains that transitioning a fleet from diesel to alternative fuel can be costly and may not be economically feasible in the SJV.³⁸ Additionally, according to the SJVUAPCD, the emissions benefit associated with such a transition is minimal given the stringent particulate matter requirements under CARB's Fleet Rule for Public Agencies, and the relatively small difference in NO_x emissions, if any, between diesel and alternative fuel vehicles.³⁹ The commenter provides no information to support a claim that the SJVUAPCD could reasonably have adopted and implemented identical or similar rules in the SJV prior to the RACM/RACT implementation deadline, which was December 14,

³⁷ 2012 PM_{2.5} Plan, Appendix C at C-7 to C-11.

³⁸ *Id.* at C-8, C-9 (noting that "establishing new alternative fuel infrastructure can cost millions of dollars and alternative fuel SWCVs generally cost \$25,000 more than diesel").

³⁹ *Id.*

2013. We note that none of the SCAQMD fleet rules identified above has been submitted for approved into the California SIP.

Comment 6c: Indirect Source Review (ISR) Improvements. Earthjustice comments that the District can obtain additional emissions reductions by expanding the applicability of its ISR rule, which Earthjustice notes was last updated in 2005. Earthjustice suggests that the District could eliminate provisions that allow businesses to mitigate their emissions by paying fees (or establish a minimum emission level for when a business may use this option), add limits for PM_{2.5} emissions, and require projects to achieve greater emissions reductions.

Response 6c: We disagree with the commenter's suggestion that revisions to SJVUAPCD Rule 9510 ("Indirect Source Review") are necessary to satisfy RACM requirements for the 2006 PM_{2.5} NAAQS in the SJV.

SJVUAPCD Rule 9510, as adopted December 15, 2005, requires applicants for development projects of certain sizes and certain transportation or transit projects to reduce NO_x and particulate matter (PM) emissions from the development and use of such projects through various on-site mitigation measures or payment of fees to fund off-site emission reduction projects. The EPA approved SJVUAPCD Rule 9510 into the California SIP at 76 FR 26609 (May 9, 2011) but explained in that action that the EPA and the District were acting under section 110(a)(5) of the CAA. Under that section, the EPA is prohibited from requiring states to include ISR programs in SIPs. Specifically, CAA section 110(a)(5)(A)(i) states that any State *may* include in a State implementation plan, but the Administrator *may not require* as a condition of approval of such plan under this section, any indirect source review program. Section 110(a)(5)(A)(i) also states that

the Administrator may approve and enforce, as part of an applicable implementation plan, an indirect source review program which the State chooses to adopt and submit as part of its plan.⁴⁰ Because SJVUAPCD Rule 9510 constitutes an ISR program, the EPA may not require the District to consider revisions to this rule, for RACM purposes or otherwise.

Comment 6d: Fireplace Rule Improvements. Earthjustice comments that the District could reduce direct PM_{2.5} emissions by making SJVUAPCD Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters) more stringent. Earthjustice notes that this rule was updated in 2014, but argues that this update did not make the rule “as stringent as it reasonably could,” because it allows cleaner classes of wood-burning heaters to be used at ambient concentrations up to 65 microgram per meter cubed (µg/m³). Earthjustice argues that a more appropriate threshold would be 35 µg/m³, the attainment level for the 2006 PM_{2.5} NAAQS, and that the District should amend the rule to disallow use of these heaters when concentrations are expected to exceed this level. Earthjustice asserts that the District “should prioritize making the rule as protective as possible” to reduce direct PM_{2.5} emissions.

Response 6d: We disagree with the commenter’s suggestion that revisions to SJVUAPCD Rule 4901 are necessary to satisfy RACM requirements for the 2006 PM_{2.5} NAAQS in the SJV.

Consistent with the District’s rule amendment commitments in the 2012 PM_{2.5} Plan,⁴¹ the SJVUAPCD amended Rule 4901 on September 18, 2014, and CARB

⁴⁰ CAA section 110(a)(5)(A)(i).

⁴¹ 80 FR 1816, 1832 at Table 3 (January 13, 2015); *see also* 2012 PM_{2.5} Plan, Chapter 5 (“Control Strategy”), Section 5.3 (“New Control Measures”), p. 5-21 to 5-22.

submitted the amended rule to the EPA for SIP action on November 6, 2014.⁴² On August 15, 2016, Acting Regional Administrator Alexis Strauss signed a notice of final rulemaking to approve SJVUAPCD Rule 4901, as amended September 18, 2014, as meeting applicable CAA requirements and implementing RACM/RACT for PM_{2.5} emissions from wood burning devices.⁴³

Comment 6e: *Interim Charbroiling Regulations*. Earthjustice argues that the District has delayed updating its charbroiler rule even though the Bay Area Air Quality Management District (BAAQMD) has already implemented regulations on under-fired charbroilers. Earthjustice points out that in 2012, it and other organizations asked the District to update the rule sooner, to include controls similar to those in the Bay Area and to follow up with another rule update when new technologies are reasonably available.

Response 6e: We disagree with the commenter's suggestion that SJVUAPCD Rule 4692 (Commercial Charbroiling) fails to satisfy RACM requirements for the 2006 PM_{2.5} NAAQS in the SJV and that control measures for under-fired charbroilers are necessary to satisfy these requirements.

SJVUAPCD Rule 4692, as amended September 17, 2009, applies to chain-driven charbroilers used in commercial meat cooking and requires a catalytic oxidizer or alternative controls with a control efficiency of at least 83 percent for PM₁₀ emissions and 86 percent for VOC emissions. The rule exempts charbroilers used to cook less than 400 pounds of meat in a calendar week, and other limited-use charbroilers that do not exceed weekly and rolling 12-month maximum use limits and that have not previously been

⁴² 80 FR 58637 (September 30, 2015).

⁴³ EPA, Final Rule, "Approval of California Air Plan Revisions, San Joaquin Valley Unified Air Pollution Control District," August 15, 2016 (pre-publication notice).

required to comply with the rule's control requirements. It does not regulate under-fired charbroilers.⁴⁴

The BAAQMD is the only air district that we are aware of that has adopted regulations to reduce emissions from under-fired charbroilers. BAAQMD Regulation 6, Rule 2 (Commercial Cooking Equipment),⁴⁵ applies to chain-driven charbroilers in restaurants that purchase 500 pounds or more of beef per week, and to under-fired charbroilers in restaurants that purchase 1,000 pounds or more of beef per week. The rule requires these restaurants to control emissions using a certified control device and to register charbroilers and associated emission control devices with the BAAQMD. The rule exempts low-utilized charbroilers, including under-fired charbroilers used to grill less than 800 pounds of beef per week.⁴⁶

According to BAAQMD planning and compliance staff, the control requirements in Regulation 6, Rule 2 for under-fired charbroilers have not yet been implemented in practice.⁴⁷ BAAQMD staff noted that no under-fired charbroilers in the Bay Area are currently registered pursuant to Regulation 6 Rule 2, indicating that restaurants in the Bay Area are operating below the thresholds that trigger the requirements. In addition, the BAAQMD's most recent inspections found that restaurants were below these thresholds.⁴⁸ Significantly, the BAAQMD has not yet certified any emission control

⁴⁴ SJVUAPCD Rule 4692 (amended September 17, 2009), sections 4.1, 5.1, and 5.2.

⁴⁵ BAAQMD Regulation 6, Rule 2 (adopted December 5, 2007), available at <http://www.arb.ca.gov/DRDB/BA/CURHTML/R6-2.PDF>.

⁴⁶ BAAQMD Regulation 6, Rule 2 (adopted December 5, 2007), sections 6-2-102, 6-2-110, 6-2-111, 6-2-300, and 6-2-400.

⁴⁷ E-mail dated April 4, 2016, from Virginia Lau of the BAAQMD to Stanley Tong of EPA Region 9, regarding "Update on Bay Area charbroiler registration."

⁴⁸ BAAQMD staff noted that these inspections occurred during a period of economic recession, and that conditions may have changed since. E-mail dated April 4, 2016, from Virginia Lau of the BAAQMD to Stanley Tong of EPA Region 9, regarding "Update on Bay Area charbroiler registration."

devices for under-fired charbroilers. BAAQMD staff explained that they are waiting to receive and review final test reports from the University of California at Riverside, Center for Environmental Research and Technology (CE-CERT) before making certifications.⁴⁹

The SJVUAPCD's 2012 PM_{2.5} Plan summarizes PM control technology for under-fired charbroilers.⁵⁰ It finds that catalytic oxidizers are not effective for under-fired charbroilers because the exhaust from these devices loses too much heat before it reaches the catalyst. The Plan lists High Efficiency Particulate-Arresting (HEPA) filtration, Electrostatic Precipitators (ESP), and Wet Scrubbers as potentially more effective control technology for under-fired charbroilers, but notes that the SJVUAPCD found these technologies were "unproven and extremely costly" when it amended SJVUAPCD Rule 4692 in 2009. During that amendment process, the District found that the initial costs for these controls ranged from \$37,500 to \$104,000, which results in a cost of approximately \$58,200 per ton of PM_{2.5} reduced. The District has estimated the total costs of installing, operating, and maintaining these controls to be as much as 20 to 30 percent of a restaurant's net profits.⁵¹ As a result, the District decided not to adopt regulations for under-fired charbroilers as part of its rule amendments in 2009. We note that the Plan

⁴⁹ CE-CERT informed SCAQMD that charbroiler testing will be delayed for up to four months due to fire suppression system upgrades in its test kitchen. E-mail dated March 16, 2016 from Michael Laybourn of the SCAQMD to Stanley Tong of EPA Region 9, regarding "Charbroiler Testing."

⁵⁰ 2012 PM_{2.5} Plan, Appendix D at D-111 to D-117.

⁵¹ Action Summary Minutes, San Joaquin Unified Air Pollution Control District, Governing Board, August 20, 2009, page 7, available at http://www.valleyair.org/Board_meetings/GB/agenda_minutes/Minutes/2009/Minutes_GB_2009_Aug.pdf

contains the District Governing Board's commitment to adopt control measures for under-fired charbroilers in 2016.⁵²

A study conducted by the University of California at Berkeley⁵³ arrives at a similar conclusion regarding the cost of PM controls for under-fired charbroilers. Using 2007 economic census data, the study estimates the average annual profit of restaurants in the SJVUAPCD area to be \$23,000–\$47,000 per establishment, for a profit margin of 3.5–5.9 percent. Similarly, the study estimates the annual profit for average large restaurants (*i.e.*, restaurants averaging 60 employees) to be approximately \$110,000. The study also finds that the average capital cost for particulate matter (PM) emission controls such as an ESP, HEPA filtration, or wet scrubber can range from approximately \$38,750 to \$50,000, with average annualized costs for installation and operation of \$11,000–\$15,000. The study calculates the total costs associated with these controls to be approximately 10–14 percent of an average large restaurant's profits. The study states that "[t]hese figures may appear modest...given that installing control technologies would amount to only a tenth of [large] restaurant profits. However...this figure is several times larger than the case of successful chain-driven charbroiler regulations, where the cost of installing catalytic oxidizers represented just 2.2 percent of average restaurant profits."⁵⁴ The study notes that its annualized cost estimates parallel SJVUAPCD's estimates, even though the data were drawn from different sources.⁵⁵

⁵² 2012 PM_{2.5} Plan, Chapter 5 ("Control Strategy"), Section 5.3 ("New Control Measures"), p. 5-21 to 5-22, and SJVUAPCD Governing Board Resolution 2012-12-19 (December 20, 2012), page 4; *see also* 80 FR 1816, 1832 at Table 3 (January 13, 2015).

⁵³ Bellisario, J., Mandel, B., Perkins, J., Ruan, Y., "Regulating Emissions from Under-fired Charbroilers," University of California, Berkeley, Goldman School of Public Policy, May 2012.

⁵⁴ *Id.* at p. 24.

⁵⁵ *Id.* at p. 24.

We anticipate the CE-CERT research report will help clarify the cost effectiveness of various under-fired charbroiler emission control technologies, some of which are prototypes, which will supplement the earlier Berkeley study to help inform more effective rule development.⁵⁶ Additionally, the District is currently undertaking efforts that may yield additional information relevant to whether additional controls for charbroilers would be appropriate and feasible in the SJV. To help study the technological feasibility and effectiveness of potential control technologies, the SJVUAPCD Governing Board approved \$750,000 for its Restaurant Charbroiler Technology Partnership program to fund PM control technology demonstration projects for under-fired charbroilers at Valley restaurants.⁵⁷ The District's funding would include the full purchase cost, installation, operation, maintenance, and other costs such as modifications to existing system configurations and structural reinforcements, and will help evaluate control systems operations, maintenance, and labor costs in the field. Completion of these research efforts will allow regulatory agencies to evaluate overall PM reduction strategies, which will help in designing economically and technically feasible regulations that can achieve the necessary PM reductions.

Based on these evaluations, we find that SJVUAPCD Rule 4692 implements RACM/RACT for charbroilers for purposes of the 2006 PM_{2.5} NAAQS in the SJV.

Comment 6f: Performance Standards for Flares. Earthjustice comments that the District could strengthen Rule 4311 (Flares) by adopting a performance-based standard for

⁵⁶ The SCAQMD, BAAQMD, SJVUAPCD, and EPA Region 9 are part of a workgroup to provide input on the CE-CERT under-fired charbroiler testing research.

⁵⁷ See Restaurant Charbroiler Technology Partnership, available at <http://valleyair.org/grants/rctp.htm>, and "Charbroilers Come Under San Joaquin Valley Air District's Microscope," The Modesto Bee, December 27, 2015, <http://www.recordnet.com/article/20160101/NEWS/160109993>.

flaring. Earthjustice states that the District should assess the strength of its rule against rules in other areas with high oil and gas production, and suggests North Dakota as an example. As explained by Earthjustice, North Dakota requires operators to meet targets for natural gas capture that increase over time from 74 percent in 2014 to an expected 90 percent by 2020, and allows state regulators to restrict oil production if the operators do not meet these targets. Earthjustice says that the District could “borrow from” this approach by assessing the percentage of natural gas flared in the San Joaquin Valley and developing regulations to reduce flaring.

Response 6f: We disagree with the commenter’s suggestion that revisions to SJVUAPCD Rule 4311 (Flares) are necessary to satisfy RACM requirements for the 2006 PM_{2.5} NAAQS in the SJV.

SJVUAPCD Rule 4311, as amended June 18, 2009, limits VOC, NO_x, and sulfur oxides (SO_x) emissions from industrial operations involving the use of flares. The rule includes general requirements for combusting waste gases, emission standards for ground-level enclosed flares, and performance targets for petroleum refinery flares. Operators of refinery flares and flares with capacity greater than 5.0 MMBtu/hour are required to submit flare minimization plans (FMPs) containing information such as detailed process diagrams, descriptions of upstream equipment, and evaluations of preventive measures to reduce flaring.⁵⁸ The rule prohibits flaring unless it is done consistently with a District-approved FMP.⁵⁹ Additionally, the rule includes monitoring,

⁵⁸ SJVUAPCD Rule 4311 (adopted June 18, 2009), sections 5.8 and 6.5.

⁵⁹ *Id.*

recordkeeping, and reporting requirements, including a requirement for operators to investigate and report flaring events.⁶⁰

As the commenter notes, North Dakota has adopted rules governing flaring in the oil and gas industry, through provisions of the North Dakota Century Code and an Order issued by the Industrial Commission of North Dakota. Section 38-08-06.4 of the North Dakota Century Code allows oil wells to flare gas during the first year of production, and thereafter requires wells either to be capped or to be equipped with approved capture or control measures that, at a minimum, reduce flared gas by at least 60 percent, unless the operator can demonstrate that such measures are not economically feasible.⁶¹ Industrial Commission Order 24665 adopts tiered gas capture goals that include a target of 74 percent capture in 2014 and an end target of 90 percent capture in 2020.⁶²

The SJVUAPCD's 2012 PM_{2.5} Plan states that Rule 4311 is more stringent than flare rules in other California air districts. Appendix D of the Plan compares Rule 4311 to SCAQMD Rule 1118, BAAQMD Rules 12-11 and 12-12, and Santa Barbara County Air Pollution Control District (SBCAPCD) Rule 359.⁶³ According to the District, these rules contain requirements for FMPs and monitoring, recordkeeping, and reporting provisions similar to those in SJVUAPCD Rule 4311, and emission standards for ground-level enclosed flares, but Rule 4311 applies to a wider range of operations and does not include certain exemptions present in the other districts' rules.⁶⁴ The District also states that the Sacramento Metropolitan Air Quality Management District (SMAQMD) and Ventura

⁶⁰ *Id.* at sections 6.1 and 6.2.

⁶¹ North Dakota Century Code, Section 38-08-06.4, as effective January 2016.

⁶² State of North Dakota, Industrial Commission Order No. 24665 (dated July 1, 2014).

⁶³ The 2012 PM_{2.5} Plan mistakenly identifies the Santa Barbara rule as "Rule 4359." 2012 PM_{2.5} Plan, Appendix D at D-71.

⁶⁴ 2012 PM_{2.5} Plan, Appendix D at D-71.

County Air Pollution Control District (VCAPCD) do not have specific prohibitory rules for flares.⁶⁵

The District has addressed the North Dakota Century Code and the Industrial Commission Order in Appendix C of the “2015 Plan for the 1997 PM_{2.5} Standard” (hereafter “2015 PM_{2.5} Plan”).⁶⁶ There, the District concludes that SJVUAPCD Rule 4311 is more stringent than the North Dakota rule. Among its findings in support of this conclusion, the District notes that Rule 4311 applies to a broader range of sources and achieves a higher percentage of gas capture.⁶⁷ Appendix C of the 2015 PM_{2.5} Plan also discusses SBCAPCD Rule 359, which includes a performance standard for gas volume.⁶⁸ The District concludes that Rule 4311 is more stringent than this rule, citing reasons that include Rule 4311’s applicability to a broader range of sources, fewer exemptions, and greater percentage gas capture.⁶⁹

We agree with the District’s analysis and conclusion that SJVUAPCD Rule 4311 is at least as stringent as the rules adopted by the other California air districts and the requirements in place in North Dakota. Therefore, we disagree with the commenter’s assertion that a performance-based standard like North Dakota’s would be more protective than Rule 4311. While Rule 4311 does not set performance targets for

⁶⁵ *Id.* The VCAPCD does not have a specific flaring rule, but VCAPCD Rule 54, “Sulfur Compounds” includes requirements for flaring events, including FMPs. The District’s “2015 Plan for the 1997 PM_{2.5} Standard” (“2015 PM_{2.5} Plan”) includes this rule in a table comparing Rule 4311 to other California air district rules, and states that SJVUAPCD Rule 4311 is at least as stringent. 2015 PM_{2.5} Plan, Appendix C: BACM and MSM for Stationary and Area Sources, at page C-79.

⁶⁶ 2015 PM_{2.5} Plan, Appendix C: BACM and MSM for Stationary and Area Sources, at page C-81.

⁶⁷ In its comparison of Rule 4311 to the North Dakota provisions, the 2015 PM_{2.5} Plan states that Rule 4311 “requires 95% capture and treatment of produced gas.” 2015 PM_{2.5} Plan, Appendix C: BACM and MSM for Stationary and Area Sources, at page C-82. We interpret this to mean that the rule achieves at least 95 percent capture in practice, as demonstrated at Table C-11 of the Plan. 2015 PM_{2.5} Plan, Appendix C: BACM and MSM for Stationary and Area Sources, at page C-80. *See* e-mail dated May 20, 2016, from Sheraz Gill of the SJVUAPCD to Andrew Steckel of EPA Region 9, regarding Small flares question.

⁶⁸ 2015 PM_{2.5} Plan, Appendix C: BACM and MSM for Stationary and Area Sources, at pp. C-79 to C-81.

⁶⁹ *Id.* at C-81.

reducing flared gas, information in the record indicates that it achieves emission reductions greater than those targets. Table C-11 of the 2015 PM_{2.5} Plan shows that the percentage of gas flared in the SJV in the years between 2009 and 2013 has never exceeded 5 percent.⁷⁰ This analysis addresses the commenter's suggestion that the District should assess the percentage of natural gas flared in the District, and it indicates that adoption of requirements like North Dakota's would not reduce emissions from flaring in the SJV.

Based on this assessment, we find that SJVUAPCD Rule 4311 represents RACT for flaring operations in the SJV, and that the alternatives suggested by the commenter would not achieve additional emission reductions.

Comment 7: Earthjustice comments that the RACM/RACT analysis in the Plan does not include reasonable controls for condensable emissions, and that the EPA must therefore disapprove the RACM/RACT demonstration. Earthjustice states that 40 CFR section 51.1002(c) requires agencies to set controls for condensable emissions beginning January 1, 2011, and quotes the EPA's prior statement at 72 Fed. Reg. 20,586, 20,652 that "[w]e expect States to address the control of direct PM_{2.5} emissions, including condensables [sic]"⁷¹ with any new actions taken after January 1, 2011."

Response 7: We agree with Earthjustice's statement that the transition period under 40 CFR section 51.1002(c) (as effective May 29, 2007)⁷² allowing state and local agencies

⁷⁰ 2015 PM_{2.5} Plan, Appendix C: BACM and MSM for Stationary and Area Sources, at page C-79. SJVUAPCD staff confirmed that the data in this table comes from the annual emissions inventory reports submitted by sources to the District. E-mail dated April 27, 2016, from Sheraz Gill of the SJVUAPCD to Andrew Steckel of EPA Region 9, regarding SJV flares data inquiry.

⁷¹ The Federal Register notice uses the term "condensable PM."

⁷² 72 FR 20586 (April 25, 2007). The EPA's recent final rule to implement the PM_{2.5} NAAQS also requires that emission limitations for PM_{2.5} sources address condensable PM_{2.5}. See EPA, Final Rule, "Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements,"

to submit plans that do not address condensable emissions ended on January 1, 2011. We disagree, however, with the claim that the EPA must disapprove the RACM/RACT demonstration in the Plan for failure to assess controls on condensable PM_{2.5} emissions.

EPA regulations at 40 CFR section 51.1002(c), as effective May 29, 2007, provide that, after January 1, 2011, for purposes of establishing emissions limits to satisfy requirements for RFP and reasonably available control measures/reasonably available control technology (RACT), states must establish such limits taking into consideration the condensable fraction of direct PM_{2.5} emissions. Because direct PM_{2.5} is comprised of both filterable PM_{2.5} and condensable PM_{2.5},⁷³ the EPA has explained that both the emissions inventories underlying a PM_{2.5} attainment plan and any emission limits for sources of direct PM_{2.5} in the control strategy must take into consideration the condensable fraction of PM_{2.5} emissions.⁷⁴ As the EPA stated in the July 29, 2016 final rule to implement the PM_{2.5} NAAQS, it is particularly important to ensure that both the filterable and condensable components of direct PM_{2.5} emissions are accurately represented in the base year emissions inventory underlying a RACM/RACT control analysis.⁷⁵

July 29, 2016 (pre-publication notice) at p. 567 (requiring at 40 CFR 51.1009(c) that, for new or revised source emissions limitations on sources of direct PM_{2.5} emissions, states apply such emissions limitations either to the total of the filterable plus condensable fractions of direct PM_{2.5}, or to filterable PM_{2.5} and condensable PM_{2.5} separately).

⁷³ Certain commercial or industrial activities involving high temperature processes (*e.g.*, fuel combustion, metal processing, and cooking operations) emit gaseous pollutants into the ambient air which rapidly condense into particle form. These “condensable” particulate matter emissions exist almost entirely in the 2.5 or less micron range and can consist of organic material, sulfuric acid and metals. 80 FR 15340, 15343 at n. 7 (March 23, 2015); *see also* 72 FR 20586, 20651 (April 25, 2007).

⁷⁴ *See, e.g.*, 80 FR 15340, 15412 (March 23, 2015) (discussing requirement to address condensable PM_{2.5} in base year emissions inventory and related SIP control strategies).

⁷⁵ *See* EPA, Final Rule, “Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements,” July 29, 2016 (pre-publication notice) at pp. 66-77, 90-104 and 139-140 (discussing requirements to include condensable PM_{2.5} in base year emissions inventories and in RACM/RACT control evaluations); *see also* 80 FR 15340 at 15378, 15412.

Chapter 4 of the 2012 PM_{2.5} Plan contains a brief discussion of the District's approach to condensable PM_{2.5} emissions and states that condensable particulates are included in the District's total emissions inventory for direct PM_{2.5}.⁷⁶ The base year inventory for direct PM_{2.5} emissions is provided in Appendix B of the 2012 PM_{2.5} Plan and includes condensable emissions. Specifically, the PM_{2.5} emissions inventory for commercial cooking operations incorporates emission factors from a source testing study that collected both filterable and condensable particulate matter (PM).⁷⁷ Similarly, the SJVUAPCD's PM_{2.5} emission factors for natural gas fired boilers, turbines and engines in the manufacturing and industrial category are based on the EPA's AP-42 emission factors, which include both filterable and condensable PM.⁷⁸ Also, PM in the emissions inventory from biomass boilers and natural gas turbines for the electric utilities sector is based on PM₁₀ testing required by operating permits and includes both filterable and condensable PM.⁷⁹ According to the emissions inventories in the 2012 PM_{2.5} Plan,

⁷⁶ See 2012 PM_{2.5} Plan at p. 4-22.

⁷⁷ See "2006 Area Source Emissions Inventory Methodology 690 – Commercial Cooking Operations," available at http://www.valleyair.org/Air_Quality_Plans/EmissionsMethods/MethodForms/Current/CommercialCooking2006.pdf. See also Welch, W.A. and Norbeck, J.M., 1998, "Development of Emission Test Methods and Emission Factors for Various Commercial Cooking Operations," TO-98-14-3 and e-mail dated May 20, 2016, from W. Welch of the SCAQMD to Stanley Tong of USEPA, RE: Development of PM Charbroiling Emission Factors using SC 5.1 (confirming that tests were performed using SCAQMD Method 5.1 which includes both filterable and condensable PM).

⁷⁸ SJVUAPCD. "2006 Area Source Emissions Inventory Methodology 050 – Industrial Natural Gas Combustion" at p. 3 (identifying emission factors are based on the EPA's AP-42 chapters 1.4 and 3.2, which include filterable and condensable PM).

⁷⁹ E-mail dated May 18, 2016, from Chay Thao of the SJVUAPCD to Stanley Tong of EPA Region 9, regarding "Gas Turbine PM source testing condensable"; see also SJVUAPCD, Notice of Final Action, Minor Title V Permit Modification, District Facility #C-14 (April 26, 2012), permit condition 21, available at [https://yosemite.epa.gov/R9/air/EPSS.NSF/0201370ee436adf08825653000726dc1/e76e9625e609621088257a0e00535d9c/\\$FILE/Public%20Notice%20Pkg.pdf](https://yosemite.epa.gov/R9/air/EPSS.NSF/0201370ee436adf08825653000726dc1/e76e9625e609621088257a0e00535d9c/$FILE/Public%20Notice%20Pkg.pdf) and SJVUAPCD, Notice of Final Action, Revised Final Determination of Compliance, Project Number: N-1113502 (January 18, 2012), permit condition 51, available at [https://yosemite.epa.gov/R9/air/EPSS.NSF/0201370ee436adf08825653000726dc1/5f867ce070483067882579c300793cbe/\\$FILE/Public%20Notice%20Package.pdf](https://yosemite.epa.gov/R9/air/EPSS.NSF/0201370ee436adf08825653000726dc1/5f867ce070483067882579c300793cbe/$FILE/Public%20Notice%20Package.pdf).

approximately 38 percent of the 2007 direct PM_{2.5} inventory for stationary and area sources comes from fugitive dust and farming, emission sources that generally do not produce condensable PM emissions. Stationary source combustion processes that emit condensable PM, such as electric utilities, commercial cooking operations and glass melting furnaces, account for approximately 13.5 percent of the 2007 PM_{2.5} inventory for stationary and area sources. Residential fuel combustion, fires, and managed burning activities account for 44 percent of the stationary and area source inventory, and miscellaneous industrial processes make up the remainder of the non-mobile source inventory.⁸⁰

The 2012 PM_{2.5} Plan relies on several SJVUAPCD rules regulating direct PM emissions as part of the PM_{2.5} control strategy, including Rule 4692 (Commercial Charbroiling, amended September 17, 2009), Rule 4103 (Open Burning, amended April 15, 2010), Rule 4354 (Glass Melting Furnaces, amended May 19, 2011), and Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters, amended September 18, 2014).⁸¹ Of the SJVUAPCD rules that control direct PM emissions, only two establish emission limits for PM: Rule 4692 and Rule 4354. Both of these rules contain control requirements that apply to condensable PM and require sources to use test methods that measure condensable PM.

Specifically, section 5.2 of SJVUAPCD Rule 4692 requires that each chain-driven charbroiler be equipped and operated with a catalytic oxidizer that has a control efficiency of at least 83 percent for PM₁₀ emissions, and section 6.5.1 of the rule requires testing in accordance with the “South Coast Air Quality Management District’s

⁸⁰ 2012 PM_{2.5} Plan, Appendix B at B-3.

⁸¹ 81 FR 6936 at 6951-52, Table 3 (February 9, 2016).

Protocol,” which requires measurement of both condensable and filterable PM in accordance with SCAQMD Test Method 5.1.⁸² SJVUAPCD Rule 4692 defines PM₁₀ as defined in SJVUAPCD Rule 1020 and states that “[f]or purposes of determining control efficiency, all particulate collected using the test method specified in Section 6.5 shall be considered PM₁₀. ”⁸³ Because section 6.5 of SJVUAPCD Rule 4692 requires measurement of both condensable and filterable PM, both condensable and filterable PM are considered PM₁₀ under the rule.⁸⁴ Similarly, section 5.4 of SJVUAPCD Rule 4354 establishes emission limits for PM₁₀, also defined as in SJVUAPCD Rule 1020,⁸⁵ and states that “total PM₁₀ includes both filterable PM₁₀ and condensable PM₁₀. ” Section 6.5.9 of SJVUAPCD Rule 4354 requires testing for condensable PM emissions using EPA Method 202.⁸⁶ No other SIP control measure in the RACM/RACT demonstrations in the 2012 PM_{2.5} Plan establishes direct PM emission limitations.

⁸² See SCAQMD Protocol, *Determination of Particulate and Volatile Organic Compound Emissions From Restaurant Operations*, November 14, 1997, available at [http://yosemite.epa.gov/R9/R9Testmethod.nsf/0/3D4DEB4D21AB4AAF882570AD005DFF69/\\$file/SC%20Rest%20emiss.pdf](http://yosemite.epa.gov/R9/R9Testmethod.nsf/0/3D4DEB4D21AB4AAF882570AD005DFF69/$file/SC%20Rest%20emiss.pdf) and SCAQMD Test Method 5.1, *Determination of Particulate Matter Emissions From Stationary Sources Using a Wet Impingement Train*, March 1989, available at <http://www.aqmd.gov/docs/default-source/laboratory-procedures/methods-procedures/stm-005-1.pdf?sfvrsn=2>.

⁸³ SJVUAPCD Rule 4692 (amended September 17, 2009), section 3.6, defining PM₁₀ “as defined in Rule 1020 (Definitions).” SJVUAPCD Rule 1020 defines “particulate matter” as “any material except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions,” and defines “PM-10” as “particulate matter with an aerodynamic diameter smaller than or equal to a nominal ten (10) microns as measured by the applicable state and federal reference test methods.” SJVUAPCD Rule 1020 (amended February 21, 2013), sections 3.32 and 3.36, approved at 79 FR 59433 (October 2, 2014).

⁸⁴ Welch, W.A. and Norbeck, J.M., 1998, “Development of Emission Test Methods and Emission Factors for Various Commercial Cooking Operations,” TO-98-14-3 (indicating that the majority of PM emitted from commercial cooking operations is less than 2.5 microns).

⁸⁵ See SJVUAPCD Rule 4354 (amended May 19, 2011), section 3.30, defining PM₁₀ “as defined in Rule 1020 (Definitions).” SJVUAPCD Rule 1020 defines “particulate matter” as “any material except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions,” and defines “PM₁₀” as “particulate matter with an aerodynamic diameter smaller than or equal to a nominal ten (10) microns as measured by the applicable state and federal reference test methods.” SJVUAPCD Rule 1020 (amended February 21, 2013), sections 3.32 and 3.36, approved at 79 FR 59433 (October 2, 2014).

⁸⁶ 75 FR 80118 (December 21, 2010).

We therefore find that the 2012 PM_{2.5} Plan adequately addresses the condensable fraction of direct PM_{2.5} both in the base year emissions inventory and in the SIP control strategy.

Comment 8: Earthjustice argues that the EPA must disapprove the ammonia RACM/RACT demonstration because the District has not demonstrated that it has adopted all reasonably available control measures. According to Earthjustice, the Plan “includes no analysis of how Rules 4565, 4566, and 4570 actually control ammonia emissions,” and the District’s ammonia RACM/RACT demonstration “is little more than the District’s rationalizations for *not* adopting reasonable controls” (emphasis in comment). Earthjustice says that the EPA has proposed to excuse the Plan’s failure to analyze ammonia controls “because it was submitted too soon after the decision in *NRDC* for the District to have incorporated a full analysis of ammonia controls into the Plan.” Earthjustice asserts that this consideration “provides no basis for finding that the statutory requirements have been met.”

Response 8: We disagree with Earthjustice’s assertion that the EPA must disapprove the ammonia RACM/RACT demonstration in the Plan. As we explained in our proposed rule, the 2014 Supplement contains a discussion of three SIP-approved District rules that regulate VOCs but also have the effect of reducing ammonia emissions in the SJV, as well as ammonia control measures implemented elsewhere that the District evaluated for technical and economic feasibility.⁸⁷ These analyses, which the EPA has developed further below, demonstrate that SJVUAPCD Rule 4565, Rule 4566, and Rule 4570 reduce ammonia emissions from confined animal facilities (CAFs) and composting

⁸⁷ 80 FR 1816 at 1827-1830 (referencing 2014 Supplement at Attachment A).

operations in the SJV, which together account for approximately 76 percent of the District's estimates of total 2015 ammonia emissions in the SJV.⁸⁸ We find these evaluations sufficient to demonstrate that the District has adopted RACM/RACT for ammonia emissions for purposes of the 2006 PM_{2.5} NAAQS in the SJV.

SJVUAPCD Rule 4565 (Biosolids, Animal Manure, and Poultry Litter Operations), as adopted March 15, 2007, requires that each operator of a composting/co-composting facility with a throughput of at least 100,000 wet tons per year conduct all active or curing composting either in aerated static pile(s) vented to an emission control device with a VOC control efficiency of at least 80 percent by weight, or in an in-vessel composting system vented to an emission control device with a VOC control efficiency of at least 80 percent by weight.⁸⁹ Alternatively, the operator may implement an “alternative Class Two mitigation measure” that is determined by the SJVUAPCD Air Pollution Control Officer (APCO) and the EPA to achieve equivalent VOC emission reductions.⁹⁰ According to the District's staff report for SJVUAPCD Rule 4565, the most commonly used VOC emission control devices at composting facilities are biofilters, which are used at over twenty composting facilities in the U.S. and at least five composting facilities in California.⁹¹ Biofilters reduce both VOC and ammonia emissions by oxidizing VOC to carbon dioxide and water and degrading ammonia emissions into

⁸⁸ 2012 PM_{2.5} Plan, Appendix B at B-17 and 2014 Supplement at Attachment A, p. A-1 (indicating that “farming operations” account for 239.2 tpd of ammonia emission and that “waste disposal,” which includes composting solid waste operations, accounts for 20.5 tpd of ammonia emissions in 2015, from a total 2015 ammonia inventory of 340.7 tpd).

⁸⁹ SJVUAPCD Rule 4565 (adopted March 15, 2007), section 5.3.3 (requiring implementation of at least one “Class Two mitigation measure”); *see also* 2014 Supplement at Attachment A, p. A-36 to A-39.

⁹⁰ SJVUAPCD Rule 4565 (adopted March 15, 2007), section 5.3.3 and section 3.3 (defining “alternative mitigation measure”).

⁹¹ SJVUAPCD, Final Staff Report, Revised Proposed New Rule 4565 (Biosolids, Animal Manure, and Poultry Litter Operations), March 30, 2007, at p. 9.

nitrate.⁹² For operators that use a biofilter as an emission control device, SJVUAPCD Rule 4565 contains detailed requirements for regularly maintaining, monitoring, and testing the biofilter.⁹³

Similarly, SCAQMD Rule 1133.2, as adopted January 10, 2003, generally requires operators of “new” co-composting facilities (*i.e.*, those that started operations after January 10, 2003) with design capacities of at least 1,000 tons of throughput per year to conduct all active co-composting within the confines of an enclosure meeting certain conditions, to conduct all curing using an aeration system meeting certain conditions, and to vent the exhaust from the enclosure and aeration system to an emissions control system designed and operated with a control efficiency of at least 80 percent, by weight, for both VOC and ammonia emissions.⁹⁴ Alternatively, an operator of a new co-composting facility may submit a compliance plan, for approval by the SCAQMD Executive Officer, that demonstrates an overall emission reduction of 80 percent, by weight, from specified baseline emission factors for both VOC and ammonia emissions.⁹⁵ Existing co-composting facilities with design capacities of at least 35,000 tons of throughput per year must submit a compliance plan that demonstrates an overall emission reduction of 70 percent, by weight, from specified baseline emission factors for

⁹² SCAQMD, “Technology Assessment for Proposed Rule 1133 (Emission Reductions from Composting and Related Operations),” March 22, 2002, at p. 3-4 and 3-5 (“biofilters use microorganism that live in the biofilm... to adsorb and biologically degrade contaminated air into non-harmful substances. In particular, VOC is oxidized to carbon dioxide and water, and ammonia is degraded into nitrate without creating aggravating pollution issues”); *see also* SCAQMD Rule 1133.2 (adopted January 10, 2003), section (c)(5) (defining “biofiltration” as “a pollution control technology that removes and oxidizes VOC and ammonia through the action of bacteria and other microorganisms”).

⁹³ SJVUAPCD Rule 4565 (adopted March 15, 2007), sections 5.5 and 5.7.

⁹⁴ SCAQMD Rule 1133.2 (adopted January 10, 2003), section (d)(1).

⁹⁵ *Id.* at section (d)(2).

both VOC and ammonia emissions.⁹⁶ For existing facilities or new facilities that elect to submit alternative compliance plans, the compliance plan must specify the operator's selected control method(s), which may include (among others) enclosure design or technology; aeration system design and operation; biofiltration; process controls; or best management practices.⁹⁷ According to the final staff report for SCAQMD Rule 1133.2, a well-designed, well-operated, and well-maintained biofilter can achieve 80 percent control efficiency for both VOC and ammonia emissions.⁹⁸

Although SJVUAPCD Rule 4565 does not explicitly require operators of composting/co-composting facilities to achieve specified levels of ammonia emission reductions, as does SCAQMD Rule 1133.2, both rules generally require composting facilities to use enclosures and/or aeration systems vented to an emission control device with a VOC control efficiency of 70 or 80 percent. Given the similarity in the control requirements contained in these rules, we find the requirements of SJVUAPCD Rule 4565 sufficient to satisfy RACM/RACT requirements for ammonia control for the 2006 PM_{2.5} NAAQS.

We also disagree with Earthjustice's claim that the EPA has "proposed to excuse the Plan's failure to analyze ammonia controls" because of the timing of its submission after the D.C. Circuit's decision in *NRDC v. EPA*, 706 F.3d 428 (D.C. Cir. 2013). In our proposed rule, we noted that "the timing of the *NRDC* decision in early 2013 may have

⁹⁶ *Id.* at sections (d)(3) and (j)(1).

⁹⁷ *Id.* at section (e).

⁹⁸ SCAQMD, Final Staff Report, "Proposed Rule 1133 – Composting and Related Operations: General Administrative Requirements; Proposed Rule 1133.1 – Chipping and Grinding Activities; Proposed Rule 1133.2 – Emission Reductions from Co-Composting Operations," January 10, 2003, at p. 18 (stating that "[b]ased on the information collected so far on existing biofilter composting applications, control efficiencies of about 80% to 90% for VOC and 70% to over 90% for ammonia have been achieved.... [demonstrating] that a well-designed, well-operated, and well-maintained biofilter is capable of achieving 80 percent control efficiency for VOC and ammonia").

constrained the State's and District's ability to fully evaluate additional ammonia control measures as part of a RACM/RACT control strategy ahead of the applicable Moderate area attainment date (December 31, 2015)" and stated that we were taking this unique circumstance into account in our evaluation of the Plan.⁹⁹ We also noted the absence of specific information regarding more stringent ammonia air emission control measures that may be technologically and economically feasible for implementation in the SJV area and recommended that the State and District conduct a more thorough evaluation of all available ammonia control measures as part of its development of a Serious area plan for the area.¹⁰⁰ The commenter argues generally that the Plan includes no analysis of how the District's rules control ammonia emissions but provides no specific information to show that more stringent control measures are technologically and economically feasible for implementation in the SJV area.

As explained in our proposed rule, sections 172(c)(1) and 189(a)(1)(C) of the Act require that attainment plans for Moderate nonattainment areas provide for the implementation of RACM and RACT for existing sources of PM_{2.5} and PM_{2.5} precursors in the nonattainment area as expeditiously as practicable but no later than 4 years after designation. In longstanding guidance, the EPA has interpreted the RACM requirement to include any potential control measure for a point, area, on-road or non-road emission source that is technologically and economically feasible and is not "absurd, unenforceable, or impracticable."¹⁰¹ The Act does not require adoption of every

⁹⁹ 80 FR 1816, 1830 (January 13, 2015).

¹⁰⁰ *Id.*

¹⁰¹ 80 FR 1816, 1826 (January 13, 2015) (citing "State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990," 57 FR 13498 (April 16, 1992) (General Preamble) at 13540, 13560).

conceivable control measure to satisfy the RACM requirement in a Moderate PM_{2.5} nonattainment area.¹⁰² Consistent with the EPA's recommended process for determining RACM/RACT for a given area, the District compiled a list of potential control measures for ammonia emission sources in the SJV; evaluated the identified control measures for "reasonableness," considering technological and economic feasibility and potentially adverse impacts; and identified the SIP-approved control measures in the Plan that it was relying on to implement RACM for ammonia emission sources.¹⁰³ Although the Plan does not contain every conceivable control measure for ammonia emissions, we find the control evaluations in the Plan sufficient to demonstrate that it provides for the implementation of all RACM/RACT for ammonia sources that could reasonably be implemented by the statutory implementation deadline under CAA section 189(a)(1)(C) for the 2006 PM_{2.5} NAAQS. We discuss Earthjustice's specific comments about SJVUAPCD Rule 4566 in Response 9 below, and its specific comments about SJVUAPCD Rule 4570 in Response 10 below.

Comment 9: Earthjustice disputes the District's finding that its composting rule, Rule 4566, is at least as stringent as SCAQMD Rule 1133.3, and argues that the District failed to consider some of the requirements of SCAQMD Rule 1133.3 in the table that it used to compare the two rules. Earthjustice notes that SCAQMD Rule 1133.3 requires implementation of a mitigation measure that demonstrates emissions reductions, by weight, of at least 40 percent for VOC and at least 20 percent for ammonia, and that SJVUAPCD Rule 4566 requires a mitigation measure that demonstrates emissions

¹⁰² See 55 FR 38326 (September 18, 1990) (revoking prior EPA guidance to the extent it suggested or stated that areas with severe pollution problems must implement every conceivable control measure including those that would cause severe socioeconomic disruption to satisfy RACM).

¹⁰³ 2014 Supplement at Attachment A (ammonia controls).

reductions of VOC of at least 19 percent, and does not regulate ammonia. While noting that “VOC emissions reductions may result in some ammonia emissions reductions,” Earthjustice asserts that because Rule 4566 does not regulate ammonia, the District cannot rely on the rule to result in a certain amount of ammonia emissions.

Response 9: Although SJVUAPCD Rule 4566 does not explicitly regulate ammonia emissions, we disagree with Earthjustice’s suggestion that the District cannot rely on this rule as part of its RACM/RACT control strategy for the 2006 PM_{2.5} NAAQS.

SJVUAPCD Rule 4566, as adopted August 18, 2011, requires smaller composting operations to implement at least three turns during active-phase composting and one of several mitigation measures listed in Table 1 of the rule, such as application of water or a finished compost cover, or in the alternative to implement an alternative mitigation measure approved by the APCO and the EPA that demonstrates at least 19 percent reduction, by weight, in VOC emissions.¹⁰⁴ For larger composting operations (*i.e.*, those with a total throughput between 200,000 and 750,000 wet tons per year of organic material), Rule 4566 requires operators to apply both watering and a finished compost cover in addition to implementation of at least three turns during active-phase composting, or in the alternative to implement an alternative mitigation measure approved by the APCO and the EPA that demonstrates at least 60 percent reduction, by weight, in VOC emissions.¹⁰⁵ For the largest composting operations (*i.e.*, those with a total throughput of at least 750,000 wet tons per year of organic material), Rule 4566 requires operators to implement an alternative mitigation measure approved by the APCO

¹⁰⁴ SJVUAPCD Rule 4566 (adopted August 18, 2011), section 5.2.1.

¹⁰⁵ *Id.* at section 5.2.2.

and the EPA that demonstrates at least 80 percent reduction, by weight, in VOC emissions.¹⁰⁶

SCAQMD Rule 1133.3, as adopted July 8, 2011, establishes similar requirements for greenwaste composting operations to periodically turn and water active compost piles and to apply finished compost covers.¹⁰⁷ According to the SCAQMD's staff report for Rule 1133.3, these types of "good composting practices" minimize both VOC and ammonia emissions by balancing the carbon-to-nitrogen ratio and providing adequate aeration and moisture in the compost.¹⁰⁸ As Earthjustice correctly notes, SCAQMD Rule 1133.3 also allows operators of such operations to implement an alternate mitigation measure approved by the SCAQMD Executive Officer, CARB, and the EPA that demonstrates VOC emission reductions by at least 40 percent by weight and ammonia emission reductions by at least 20 percent by weight.¹⁰⁹ For composting operations involving greater than 5,000 tons per year of foodwaste throughput, SCAQMD Rule 1133.3 establishes requirements to conduct the active phase composting using an emission control device designed and operated with an overall system control efficiency of at least 80 percent, by weight, each for VOC and ammonia emissions, or to implement an alternate mitigation measure approved by the SCAQMD Executive Officer, CARB, and the EPA that achieves equivalent reductions in both VOCs and ammonia.¹¹⁰

¹⁰⁶ *Id.* at section 5.2.3.

¹⁰⁷ SCAQMD Rule 1133.3 (adopted July 8, 2011), section (d)(2).

¹⁰⁸ SCAQMD, Final Staff Report, "Proposed Amended Rule 1133.1 – Chipping and Grinding Activities; Proposed Rule 1133.3 – Emission Reductions from Greenwaste Composting Operations," July 2011, at p. 3 ("[g]ood composting practices, which balance the carbon-to-nitrogen (C:N) ratio and provide adequate aeration and moisture, will minimize VOC, ammonia and GHG emissions").

¹⁰⁹ SCAQMD Rule 1133.3 (adopted July 8, 2011), section (d)(2)(E).

¹¹⁰ *Id.* at section (d)(3).

According to CARB, the water management requirements in SJVUAPCD Rule 4566 and SCAQMD Rule 1133.3 achieve an ammonia control efficiency of 19 percent, while use of certain kinds of aerated static piles (ASP) vented to a biofilter achieves an ammonia control efficiency ranging from 20 to 99 percent.¹¹¹ In the absence of specific information about more stringent ammonia control requirements for composting operations that the District could reasonably have implemented by the statutory implementation deadline for RACM/RACT in this area (December 14, 2013), we find the requirements of SJVUAPCD Rule 4566 adequate to satisfy RACM/RACT requirements for composting operations for purposes of the 2006 PM_{2.5} NAAQS in the SJV.

Comment 10: Earthjustice comments that the District did not adequately review Rule 4570 (Confined Animal Facilities) when it compared it to similar rules in other California districts and the state of Idaho. According to Earthjustice, SJVUAPCD Rule 4570 and Idaho's rule "employ drastically different methods to reduce emissions from dairies," and the District has not fully explored aspects of the Idaho rule that could strengthen SJVUAPCD Rule 4570. In particular, Earthjustice asserts that the District misconstrued a statement by the Idaho Department of Environmental Quality (Idaho DEQ) that described the Idaho rule as employing an "arbitrary" point system. According to Earthjustice, the maximum number of points in the system's rating scale was "arbitrary" in the sense that another number could have been selected, but the Idaho DEQ "thoroughly analyzed the control measures and their associated ammonia emission reductions," and allocated points based on these reductions. Because the District has not done a similar evaluation

¹¹¹ CARB, "ARB Emissions Inventory Methodology for Composting Facilities" (posted 2015) at Table III-3 ("Control Techniques for Composting Operations"), available at <http://www.arb.ca.gov/ei/areasrc/Composting%20Emissions%20Inventory%20Methodology%20Final%20Combined.pdf>.

of the measures in SJVUAPCD Rule 4570, Earthjustice asserts, it has not fully compared the stringency of the rule against the Idaho rule.

Earthjustice asserts that the District's comparison of the stringency of SJVUAPCD Rule 4570 and other California air district rules is insufficient because the District considered only the number of mitigation measures required by each district. Earthjustice states that the District should consider instead the ammonia emissions reductions achieved under each rule. Further, Earthjustice states, if the District finds that other air districts' mitigation measures are more effective in reducing emissions, it should incorporate those measures into its rule.

Response 10: We agree that the District appears to have misconstrued the Idaho DEQ's statement about the point system in Idaho Rule 58.01.01, sections 760 – 764 (Rules for the Control of Ammonia from Dairy Farms) (hereafter "Idaho CAF Rule") and that the District should have considered the ammonia emission reductions achieved under the rules that it evaluated, rather than simply addressing the number of mitigation measures required in each rule. For the reasons provided below, however, we find SJVUAPCD Rule 4570 adequate to satisfy RACM/RACT requirements for the 2006 PM_{2.5} NAAQS in the SJV.

SJVUAPCD Rule 4570, as amended October 21, 2010, requires that CAFs of certain sizes for dairy cows, other cattle, swine, poultry, and layer hens implement measures to reduce VOC emissions during feed operations, manure management and other CAF processes.¹¹² Both VOCs and ammonia are emitted during these activities at CAFs. Given the large proportion of ammonia emissions that come from cow manure

¹¹² See generally SJVUAPCD Rule 4570 (amended October 21, 2010).

produced at CAFs,¹¹³ we focus our evaluation below on measures to reduce ammonia from the production and handling of cow manure at dairy CAFs.

Ammonia emissions from CAF manure processes may be reduced by flushing lanes in freestall barns¹¹⁴ and limiting manure exposure to air through land incorporation.¹¹⁵ According to the SJVUAPCD, freestall barns are the largest source of manure at SJV dairies.¹¹⁶ Rule 4570 contains mandatory requirements for all dairy CAFs subject to the rule that house animals in freestalls to frequently clean the housing flush lanes – specifically, to “flush or scrape freestall flush lanes at least three (3) times per day” or to “flush, scrape, or vacuum freestall flush lanes” immediately before, after, or during each milking.¹¹⁷ In practice, most CAFs in the SJV comply with the SJVUAPCD Rule 4570 manure management requirements by flushing manure to dilute the urea in urine, which reduces ammonia emissions,¹¹⁸ and by incorporating solid manure into crop land within 72 hours of land application.¹¹⁹

¹¹³ “Ammonia Emissions and Animal Agriculture,” Susan W. Gay and Katharine F. Knowlton, Virginia Cooperative Extension, Virginia Tech, 2009 (noting that “[a]mmonia is a common by-product of animal waste due to the often inefficient conversion of feed nitrogen into animal product. Livestock and poultry are often fed high-protein feed, which contains surplus nitrogen, to ensure that the animals' nutritional requirements are met. Nitrogen that is not metabolized into animal protein (i.e., milk, meat, or eggs) is excreted in the urine and feces of livestock and poultry where further microbial action releases ammonia into the air during manure decomposition”).

¹¹⁴ W. Kroodsma, J.W.H. Huis In 't Veld & R. Scholtens, 1993, “Ammonia emissions and its reduction from cubicle houses by flushing,” *Livestock Production Science* 35: 293–302.

¹¹⁵ Ndegwa, P.M., A.N. Hristov, J. Arogo, and R.E. Sheffield, “A review of ammonia emission mitigation techniques for concentrated animal feeding operations,” *J. Bioengineering Systems*, ed. 100, 2008, p. 463–464.

¹¹⁶ SJVUAPCD, Final Staff Report: Rule 4570 (October 21, 2010), at p. 9.

¹¹⁷ SJVUAPCD Rule 4570 (amended October 21, 2010) at Section 5.6.1 and Table 4.1.D.2. Milking generally occurs at least twice a day at a typical dairy CAF. *See* Walter L. Hurley, Lactation Biology website, ANSC 438, University of Illinois, available at <http://ansci.illinois.edu/static/ansc438/Lactation/milkingfrequency.html>.

¹¹⁸ Memorandum dated June 15, 2016, from Andy Steckel to Kerry Drake, EPA Region 9, “Summary of our 6/10/16 Discussion with Kevin Abernathy, Milk Producers Council” and W. Kroodsma, et al., 1993, “Ammonia emissions and its reduction from cubicle houses by flushing,” *Livestock Production Science* 35: 293–302, at p. 300 (noting that “[f]lushing has a significant emission reducing effect [because]... the urea concentration on slats, concrete floors and in the top layer of the slurry is lowered by dilution”); *see also*

In addition, SJVUAPCD Rule 4570 requires each owner/operator of a large dairy CAF that handles or stores solid manure or separated solids outside the animal housing to remove dry manure or separated solids from the facility or cover it with a weatherproof covering from October through May, within 72 hours of collecting it, or to implement an “alternative mitigation measure”¹²⁰ approved by CARB and the EPA.¹²¹ SJVUAPCD Rule 4570 provides, in Table 4.1.H, specific requirements for applying manure to agricultural lands on the facility including the option to incorporate all solid manure within 72 hours.

We are aware of only two rules implemented in other areas that explicitly regulate ammonia emissions from dairy facilities – the Idaho CAF Rule and SCAQMD Rule 1127 (Emission Reductions from Livestock Waste).¹²² The Idaho CAF Rule assigns points to each ammonia mitigation measure listed in the rule and requires dairy farm operators to implement measures that collectively achieve at least 27 points.¹²³ The rule only applies,

SJVUAPCD, Final Staff Report: Rule 4570 (October 21, 2010), at p. 10 (noting that “[l]iquid systems are common in large dairies due to their lower labor costs and ease of use with automatic flushing systems”).

¹¹⁹ Memorandum dated June 15, 2016, from Andy Steckel to Kerry Drake, EPA Region 9, “Summary of our 6/10/16 Discussion with Kevin Abernathy, Milk Producers Council”; *see also* e-mail dated June 9, 2016, from Samir Sheikh of the SJVUAPCD to Kerry Drake of EPA Region 9, regarding “Manure Land Application.”

¹²⁰ “Alternative Mitigation Measure” is defined in Rule 4570 as “a mitigation measure that is determined by the APCO, CARB, and EPA to achieve reductions that are equal to or exceed the reductions that would be achieved by other mitigation measures listed in this rule that owners/operators could choose to comply with rule requirements.” SJVUAPCD Rule 4570 (amended October 21, 2010), Section 3.4.

¹²¹ SJVUAPCD Rule 4570 (amended October 21, 2010), Section 5.6.1 at Table 4.1.F.

¹²² *See* Idaho Administrative Code 58.01.01, section 760, and SCAQMD Rule 1127 (adopted August 6, 2004), paragraph (a). Other CAF rules in California include SCAQMD Rule 223, BAAQMD Rule 2-10, SMAQMD Rule 496, VCAPCD Rule 23, Imperial County APCD (ICAPCD) Rule 217, and Butte County AQMD Rule 450. Each of these rules also regulates CAFs but does not establish specific requirements for ammonia control. For example, SCAQMD Rule 223 (adopted June 2, 2006) identifies ammonia as a precursor to particulates, but its requirements are very similar to SJVUAPCD Rule 4570 as originally adopted June 15, 2006. Similarly, ICAPCD Rule 217 states that its purpose is to limit emissions of VOC and ammonia, but the mitigation requirements are generally equivalent to those in SJVUAPCD Rule 4570.

¹²³ Idaho Administrative Code 58.01.01, section 764, paragraph 01 (“Dairy farm best management practices”) (requiring dairies to “employ BMPs for the control of ammonia to total twenty-seven (27) points”).

however, to dairy farms containing between 1,638 and 5,063 cows, depending on the type of dairy facility.¹²⁴ SJVUAPCD Rule 4570, on the other hand, applies to dairy CAFs containing at least 500 milking cows and also applies to other types of CAFs, including beef cattle feedlots, other cattle facilities, poultry facilities, and swine facilities.¹²⁵ As we stated in our proposed rule, because the structure of the Idaho CAF Rule differs substantially from the structure of SJVUAPCD Rule 4570, it is difficult to compare the requirements in these two rules directly.¹²⁶

Additionally, according to information submitted by the SJVUAPCD, the option in the Idaho CAF Rule to cover synthetic lagoons (one of the key mitigation measures in the rule) would not be effective in the SJV and could increase ammonia emissions at CAFs in the SJV.¹²⁷ Furthermore, the Idaho CAF Rule states that “[p]oints may be obtained through third party export with sufficient documentation” and that “[a]s new information becomes available or upon request, the Director may determine a practice not listed in the table constitutes a BMP and assign a point value.”¹²⁸ These ambiguously phrased provisions allow CAF owners/operators to comply with the rule by implementing measures entirely different from those listed in the rule that may or may not be effective in reducing ammonia emissions. The commenter has provided no information to support a conclusion that the requirements of the Idaho CAF Rule will actually achieve ammonia

¹²⁴ *Id.* at section 761 (“General applicability”).

¹²⁵ SJVUAPCD Rule 4570 (amended October 21, 2010), Table 2 and Section 5.6.

¹²⁶ 80 FR 1816, 1829-30 (January 13, 2015) (noting, for example, that the Idaho CAF Rule identifies certain mitigation measures that are not included in SJVUAPCD Rule 4570, while Rule 4570 contains more stringent applicability thresholds and provisions for testing and records retention).

¹²⁷ E-mail dated June 25, 2015 from Sheraz Gill of the SJVUAPCD to Andrew Steckel of EPA Region 9, regarding “Requested Information” and attachment, “Evaluation of Covers Lagoons Manure Piles for NH₃.pdf.”

¹²⁸ Idaho Administrative Code 58.01.01, at section 764-01 (“BMPs”).

emission reductions, nor any information to indicate that the requirements of this rule are more stringent than those in SJVUAPCD Rule 4570.

SCAQMD Rule 1127, as adopted August 6, 2004, applies only to livestock waste (*i.e.*, manure management) at dairy farms and related operations. Unlike SJVUAPCD Rule 4570, which explicitly requires that dairy CAFs regularly flush, scrape, or vacuum freestall flush lanes,¹²⁹ SCAQMD Rule 1127 contains no analogous requirement to regularly clean flush lanes in freestall barns.¹³⁰ SCAQMD Rule 223, as adopted June 2, 2006, contains menu-based options for flushing, scraping, or vacuuming freestall barns but does not specifically mandate such measures.¹³¹

Additionally, SCAQMD Rule 1127 requires that a dairy operator disposing of manure within the South Coast area remove or contract to remove the manure to a manure processing operation approved in accordance with specific requirements and/or to agricultural land within the SCAQMD approved by local ordinance and/or the regional water quality board for the spreading of manure.¹³² Rule 1127 does not require that manure be incorporated into agricultural land within any specific timeframe to reduce ammonia emissions.

¹²⁹ SJVUAPCD Rule 4570 (amended October 21, 2010) at Section 5.6.1 and Table 4.1.D.2. Milking generally occurs at least twice a day at a typical dairy CAF. Walter L. Hurley, Lactation Biology website, ANSC 438, University of Illinois at <http://ansci.illinois.edu/static/ansc438/Lactation/milkingfrequency.html>.

¹³⁰ SCAQMD Rule 1127 does require dairies to remove manure accumulated in corrals at least 4 times per year and to remove manure stockpiles within 3 months of the last corral clearing day, and no more than 3 months after the date that previous stockpiles were last completely cleared. SCAQMD Rule 1127 (adopted August 6, 2004), sections (d)(4) and (d)(5).

¹³¹ SCAQMD Rule 223, Appendix A, Table 1.C (requiring owners/operations at large dairy CAFs that house animals in freestall barns to implement at least 2 of 9 listed mitigation measures, including measures to regularly flush, scrape or vacuum freestalls).

¹³² *Id.* at section (e).

Thus, neither SJVUAPCD Rule 4570 nor SCAQMD Rule 1127 strictly requires dairy CAF operators to promptly remove and dispose of collected manure to minimize ammonia emissions. The commenter has failed to identify any measure implemented in the South Coast or elsewhere that is more stringent than the requirements of SJVUAPCD Rule 4570 for this particular component of the manure handling process.

On balance, we find that SJVUAPCD Rule 4570 is more stringent than the Idaho CAF Rule and SCAQMD Rule 1127 given SJVUAPCD Rule 4570 establishes specific requirements for the frequency of flushing manure from freestall barns, which are a significant source of manure and ammonia emissions at dairy CAFs in SJV, while the Idaho CAF Rule and SCAQMD Rule 1127 contain no analogous requirements. In the absence of specific information about more stringent ammonia control requirements for CAFs that the District could reasonably have implemented by the statutory implementation deadline for RACM/RACT in this area (December 14, 2013), we find the requirements of SJVUAPCD Rule 4570 adequate to satisfy RACM/RACT requirements for CAFs for purposes of the 2006 PM_{2.5} NAAQS in the SJV.

Comment 11: Earthjustice argues that the RACM/RACT demonstration fails to comply with CAA section 189(a)(1)(C), which requires a plan to include provisions to assure that RACM is implemented no later than four years after a moderate nonattainment designation. Earthjustice asserts that this section required the District to implement RACM for the 2006 PM_{2.5} standards by December 14, 2013. According to Earthjustice, because the District has not implemented controls identified by Earthjustice as RACM/RACT and has delayed additional charbroiling and residential furnace controls,

the EPA must disapprove the demonstration and place the District on a clock to ensure that the missing measures are adopted expeditiously.

Response 11: We disagree. Section 107(a) of the CAA provides states with both the authority and primary responsibility to develop SIPs that meet applicable statutory and regulatory requirements for attaining, maintaining, and enforcing the NAAQS. States have discretion in formulating their SIPs, and the EPA is required to approve a SIP submission that satisfies the applicable requirements of the Act.¹³³

As the commenter notes, CAA section 189(a)(1)(C) requires that each attainment plan for a Moderate PM_{2.5} nonattainment area include provisions to assure that RACM for the control of PM_{2.5} and PM_{2.5} precursors are implemented no later than four years after the area's designation as nonattainment. For the SJV area, the deadline for implementation of RACM for the 2006 PM_{2.5} NAAQS under CAA section 189(a)(1)(C) was December 14, 2013. For the reasons provided in our proposed rule and further explained above in Response 6 through Response 10, we conclude that the 2012 PM_{2.5} Plan and 2014 Supplement provide for the implementation of all RACM/RACT that could reasonably be implemented in the SJV by the statutory implementation deadline, as required by CAA sections 172(c) and 189(a)(1)(C).

Additionally, we disagree with the commenter's assertion that revisions to SJVUAPCD Rule 4901 ("Wood Burning Fireplaces and Wood Burning Heaters") are necessary to satisfy RACM requirements for the 2006 PM_{2.5} NAAQS in the SJV. *See* Response 6.d. Similarly, we disagree with the commenter's assertion that SJVUAPCD

¹³³ CAA section 110(k)(3), 42 U.S.C. 7410(k)(3) and 40 CFR 52.02(a); *see also* *Union Elec. Co. v. EPA*, 427 U.S. 246, 250 (1976); *Train v. Natural Res. Def. Council*, 421 U.S. 60, 79 (1975).

Rule 4692 (Commercial Charbroiling) fails to satisfy RACM requirements for the 2006 PM_{2.5} NAAQS in the SJV. *See* Response 6.e.

Comment 12: Earthjustice argues that much of the Plan’s control strategy is unenforceable and that this is inconsistent with CAA section 110(a)(2)(A), which requires SIPs to “include enforceable emissions limitations and other control measures.” Specifically, Earthjustice argues that three control strategies challenged in recent litigation are not enforceable: (1) mobile sources measures that are not included in the SIP; (2) open-ended tonnage commitments; and (3) voluntary incentive programs.

Comment 12a: *Mobile source “waiver” measures.* Earthjustice notes that a significant portion of the emissions reductions in the Plan come from state mobile source measures for which the EPA has issued a waiver under CAA section 209. Earthjustice argues that because these measures are not included in the SIP, they are not enforceable by either the EPA or citizens, and therefore do not meet the requirements of CAA section 110(a)(2)(A).

Earthjustice also criticizes the EPA’s general policy of not including these “waiver measures” in the SIP. Earthjustice argues that requiring the EPA to approve waiver measures into the SIP is not inconsistent with Congress’ intent to provide California with “the broadest possible discretion” to develop mobile source measures, and that there is no conflict between CAA sections 110 and 209 that would prevent the EPA from adding these measures to the SIP. Additionally, Earthjustice argues that Congress has not ratified the EPA’s policy of excluding waiver measures from SIPs, asserting that the EPA had not affirmatively expressed its policy until recently and that the agency has contradicted this policy in previous statements.

Response 12a: The EPA has historically allowed California to take credit for measures for which the state has obtained a waiver of federal preemption under CAA section 209 (“waiver” measures) even though the waiver measures themselves (*i.e.*, CARB’s regulations) had not been adopted and approved as part of the California SIP. However, a recent decision by the Ninth Circuit Court of Appeals held that the EPA’s longstanding practice in this regard was at odds with the CAA requirement that state and local emissions limits relied upon to meet the NAAQS be enforceable by the EPA or private citizens through adoption and approval of such limits in the SIP.¹³⁴

In response to the court’s decision, CARB has adopted the necessary waiver measures as revisions to the California SIP and submitted them to the EPA for approval.¹³⁵ The EPA proposed to approve the waiver measures into the California SIP at 80 FR 69915 (November 12, 2015) and took final action to approve these measures into the SIP at 81 FR 39424 (June 16, 2016). Accordingly, these waiver measures are now enforceable by the EPA or private citizens under the CAA, consistent with the enforceability requirement in CAA section 110(a)(2)(A).

Comment 12b: *Open-ended commitments.* Earthjustice asserts that the District’s commitment to reduce direct PM_{2.5} by 1.9 tons per day (tpd) by 2019 is not enforceable. According to Earthjustice, although the District has committed to proposing certain measures to its board, it has not specified when it will implement those measures or committed to achieving reductions as a result of the measures. Earthjustice characterizes these measures as “goals” that have been found by courts to be unenforceable, citing

¹³⁴ See *Committee for a Better Arvin v. EPA*, 786 F.3d 1169 (9th Cir. 2015).

¹³⁵ See letter dated August 14, 2015, from Richard W. Corey, Executive Officer, California Air Resources Board, to Jared Blumenfeld, Regional Administrator, EPA Region 9, with attachments.

Bayview Hunters Point Community Advocates v. Metropolitan Transportation

Commission, 366 F.3d 692 (9th Cir. 2004). According to Earthjustice, it will be “virtually impossible” for either citizens or the EPA to determine whether the District has in fact met its 2019 reduction target, citing the EPA’s statement at 57 Fed. Reg. at 13,568 that “[a] regulatory limit is not enforceable if, for example, it is impractical to determine compliance with the published limit.” Additionally, citing CAA section 182(e)(5), Earthjustice asserts that the CAA allows “open-ended commitments” only in limited circumstances and that there is no parallel provision for creating such a “black box” in PM_{2.5} plans.

Response 12b: We disagree with the commenter’s claim that the District’s commitments in the 2012 PM_{2.5} Plan are not enforceable. We also disagree with the commenter’s suggestion that the long-term strategy provision for ozone attainment plans in CAA section 182(e)(5) is the only statutory provision that allows for approval of attainment plans that rely on state commitments, and that commitments such as those identified in the 2012 PM_{2.5} Plan are not permissible in PM_{2.5} attainment plans.

Section 182(e)(5) of the CAA authorizes the EPA to approve provisions of an attainment plan for an extreme ozone nonattainment area that anticipate development of new control techniques or improvement of existing control technologies, and to approve an attainment demonstration based on such provisions, if, *inter alia*, the State has submitted enforceable commitments to submit adopted contingency measures meeting certain criteria no later than three years before proposed implementation of the new technology measures.¹³⁶ Contrary to the commenter’s suggestion, section 182(e)(5) is not

¹³⁶ CAA section 182(e)(5).

the only provision in the CAA that allows for approval of attainment plans that rely on enforceable commitments. Sections 110(a)(2)(A) and 172(c)(6) of the CAA require that SIPs include enforceable emission limitations and such other control measures, means or techniques, as well as schedules and timetables for compliance, as may be necessary or appropriate to provide for attainment of the NAAQS by the applicable attainment date. For over 20 years, the EPA has consistently maintained its interpretation of these provisions as allowing for approval, under certain circumstances, of a SIP that contains an enforceable commitment to adopt additional controls as part of a comprehensive control strategy for attaining the NAAQS.¹³⁷ The EPA's interpretation of the Act as allowing for approval of limited enforceable commitments has been upheld by several courts of appeals.¹³⁸

As explained in our proposed rule, we generally consider three factors in determining whether to approve the use of an enforceable commitment to meet a CAA requirement: (1) does the commitment address a limited portion of the CAA-required program; (2) is the state capable of fulfilling its commitment; and (3) is the commitment for a reasonable and appropriate period of time. We stated in our proposed rule that we were not evaluating the commitments in the 2012 PM_{2.5} Plan in accordance with this

¹³⁷ See, e.g., 62 Fed. Reg. 1150, 1187 (Jan. 8, 1997) (approving ozone attainment demonstration for the South Coast Air Basin); 65 Fed. Reg. 18903 (Apr. 10, 2000) (approving revisions to ozone attainment demonstration for the South Coast Air Basin); 63 Fed. Reg. 41326 (Aug. 3, 1998) (promulgating federal implementation plan for PM-10 for Phoenix); 69 Fed. Reg. 30005 (May 26, 2004) (approving PM-10 attainment demonstration for San Joaquin Valley); 48 Fed. Reg. 51472 (approving ozone attainment demonstration for New Jersey).

¹³⁸ See, e.g., *City of Seabrook v. EPA*, 659 F.2d 1349 (5th Cir. 1981); *Connecticut Fund for the Environment v. EPA*, 672 F.2d 998 (2d Cir.), cert. denied 459 U.S. 1035 (1982); *BCCA Appeal Group v. EPA*, 355 F.3d 817 (5th Cir. 2003), *reh'g denied*, 2004 U.S. App. LEXIS 215 (5th Cir., January 8, 2004); *Environmental Defense v. EPA*, 369 F.3d 193, 209 (2d Cir. 2004); and *Committee for a Better Arvin v. EPA*, 786 F.3d 1169 (9th Cir. 2015) (upholding EPA approval of CARB and SJVUAPCD commitments as enforceable SIP measures consistent with requirements of CAA section 110(a)(2)(A)).

three-factor test because the Plan did not rely on any of these commitments to satisfy CAA requirements.¹³⁹ In response to these comments, however, we have evaluated the commitments in the 2012 PM_{2.5} Plan to amend SJVUAPCD Rule 4308 in 2013 and to adopt Rule 4905 in 2014 in accordance with our three-factor test, because these commitments were part of the control strategy to be implemented prior to the Moderate area attainment date (December 31, 2015) for the 2006 PM_{2.5} NAAQS in the SJV area.¹⁴⁰ We find that these commitments satisfy the EPA's three-factor test as follows: (1) the commitments address a limited portion of the CAA-required program because the Plan relies on them only to supplement the RACM and RFP control strategies in the impracticability demonstration and does not rely on either commitment for necessary emission reductions; (2) the state has fulfilled both commitments, as explained further below in this response; and (3) each commitment was for a reasonable and appropriate period of time – *i.e.*, to be fulfilled by 2013 and 2014, ahead of the December 31, 2015 Moderate area attainment date. Accordingly, we are approving the District's commitment to amend Rule 4308 as a RACM and approving the District's commitment to adopt Rule 4905 in 2014 as an additional reasonable measure under CAA section 172(c)(6).¹⁴¹

¹³⁹ 80 FR 1816, 1833 (January 13, 2015).

¹⁴⁰ We did not evaluate the District's commitments to amend Rule 4692 and Rule 4901 in 2016 or to achieve an aggregate reduction of 1.9 tpd of direct PM_{2.5} by 2019 in accordance with our three-factor test because these commitments address actions to be undertaken after the Moderate area attainment date (December 31, 2015) and, therefore, are not part of the control strategy for this impracticability demonstration. Additionally, we did not evaluate the District's commitment to adopt Rule 9610 in 2013 in accordance with our three-factor test because this rule is not a control measure and therefore is not eligible for SIP emission reduction credit. *See* Response 12c, *infra*.

¹⁴¹ The District's commitment to adopt Rule 4905 in 2014 does not qualify as a RACM because it is a measure implemented after the RACM implementation deadline (December 14, 2013). It is, however, an additional measure implemented before the Moderate area attainment date (December 31, 2015) and therefore may be treated as part of the Moderate area control strategy for the area under CAA section 172(c)(6).

We also find that the commitments are enforceable and therefore appropriate for approval under CAA section 110.¹⁴² Specifically, SJVUAPCD Governing Board Resolution 2012-12-19 states:

The District Governing Board commits to adopt and implement the rules and measures in the Plan by the dates specified in Chapter 5 to achieve the emissions reductions shown in Chapter 5, and to submit these rules and measures to ARB within 30 days of adoption for transmittal to EPA as a revision to the State Implementation Plan (SIP). If the total emission reductions from the adopted rules are less than those committed to in the Plan, the District Governing Board commits to adopt, submit, and implement substitute rules that will achieve equivalent reductions in emissions of direct PM_{2.5} or PM_{2.5} precursors in the same adoption and implementation timeframes or in the timeframes needed to meet CAA milestones.¹⁴³

Chapter 5 of the 2012 PM_{2.5} Plan identifies, in Table 5-3, the “regulatory control measure commitments” and related amendment dates, compliance dates, and amounts of emission reductions shown in Table 5.

Table 5. San Joaquin Valley Unified Air Pollution Control District, 2012 PM_{2.5} Plan, Specific Rule Adoption/Amendment Commitments.

Rule Number	Rule Title	Amendment Date	Compliance Date	Emission Reductions
4308	Boilers, Steam Generators, and Process Heaters	2013	2015	TBD

¹⁴² See *Committee for a Better Arvin v. EPA*, 786 F.3d 1169 (9th Cir. 2015) (upholding EPA approval of CARB and SJVUAPCD commitments as enforceable SIP measures consistent with requirements of CAA section 110(a)(2)(A)).

¹⁴³ SJVUAPCD Governing Board Resolution 2012-12-19, “In the Matter of: Adopting the San Joaquin Valley Unified Air Pollution Control District 2012 PM_{2.5} Plan.”

Rule Number	Rule Title	Amendment Date	Compliance Date	Emission Reductions
	0.075 to <2 MMBtu/hr ¹⁴⁴			
4692	Commercial Charbroiling	2016	2017	0.4 tpd PM _{2.5}
4901	Wood Burning Fireplaces and Wood Burning Heaters	2016	2016/2017	1.5 tpd of PM _{2.5}
4905	Natural Gas-Fired, Fan-Type Residential Central Furnaces	2014	2015	TBD
9610	SIP Creditability of Incentives	2013	2013	TBD

Source: 2012 PM_{2.5} Plan, Chapter 5, Table 5-3 (“Regulatory Control Measure Commitments”).

Thus, the District Governing Board’s commitment specifies the actions the Board committed to undertake, the dates by which it would take such actions, and the emission reductions (if any) that it would achieve through these actions. We find these commitments specific enough to be enforced by the EPA or by citizens under the CAA and are, therefore, approving them into the California SIP.

We note that the SJVUAPCD has made substantial progress on satisfying the commitments identified in the Plan, as follows:

Rule 4308. The District amended SJVUAPCD Rule 4308 on November 14, 2013, and CARB submitted it to the EPA for SIP action on May 13, 2014. The EPA approved amended SJVUAPCD Rule 4308 at 80 FR 7813 (February 12, 2015).

¹⁴⁴ “MMBtu” means million British Thermal Units.

Rule 4905. The District adopted Rule 4905 on January 22, 2015, and CARB submitted the rule to the EPA for SIP action on April 7, 2015. The EPA approved Rule 4905 at 81 FR 17390 (March 29, 2016).

Rule 9610. The District adopted Rule 9610 on June 20, 2013, and CARB submitted the rule to the EPA for SIP action on June 26, 2013. The EPA finalized a limited approval and limited disapproval of Rule 9610 at 80 FR 19020 (April 9, 2015).

Rule 4901. The District amended Rule 4901 on September 18, 2014, and CARB submitted the rule to the EPA for SIP action on November 6, 2014. On August 15, 2016, Acting Regional Administrator Alexis Strauss signed a notice of final rulemaking to approve SJVUAPCD Rule 4901.¹⁴⁵

Comment 12c: *Voluntary incentive programs*. Earthjustice states that the EPA's suggestion that Rule 9610 (State Implementation Plan Credit for Emission Reductions Generated Through Incentive Programs) may provide emission reductions to help satisfy the District's tonnage commitment is particularly confusing. Earthjustice understands the EPA's proposed approval of Rule 9610 and related technical support document to say that an incentive program's compliance with the rule's SIP-credibility definitions does not mean that the incentive program is, in fact, SIP-creditable. Thus, Earthjustice states, commenters "do not understand how Rule 9610 itself will provide any creditable emission reductions."

More fundamentally, Earthjustice asserts, the emissions reductions that may be achieved through the District's incentive programs cannot be credited in a SIP unless they are treated under the EPA's voluntary emissions reductions policy. Earthjustice

¹⁴⁵ EPA, Final Rule, "Approval of California Air Plan Revisions, San Joaquin Valley Unified Air Pollution Control District," August 15, 2016 (pre-publication notice).

states that “[t]he requirement to reduce emissions in exchange for incentive funding is not enshrined in any sort of control measure that is included in the [SIP] and enforceable by EPA or citizens” and that, as with “waiver measures,” approval of a strategy built upon these reductions would (again) violate Clean Air Act section 110(a)(2)(A).”

Response 12c: We agree with Earthjustice’s statement that SJVUAPCD Rule 9610 itself is not a SIP-creditable control measure and that the District therefore cannot rely on this rule to satisfy any SIP emission reduction commitments.

SJVUAPCD Rule 9610, as adopted June 20, 2013, establishes a regulatory framework for the District’s quantification of emission reductions achieved through incentive programs and provides opportunities for the EPA, CARB, and the public to review and comment on the District’s evaluations on an annual basis. As we stated in our May 19, 2014 proposal to approve Rule 9610, the rule “does not establish any emission limitation, control measure, or other requirement that applies directly to an emission source” and therefore “is not intended to implement the reasonably available control technology (RACT) standard or any other control standard under the Act.”¹⁴⁶ Instead, Rule 9610 “establishes an administrative mechanism designed to ensure that each SIP submittal in which the District relies upon emission reductions achieved through implementation of incentive programs in the SJV will adequately address the requirements of the Act.”¹⁴⁷ The requirements and procedures in Rule 9610 apply only to the District and lay the groundwork for the District’s incorporation of incentive programs into air quality plans going forward.¹⁴⁸ The EPA finalized a limited approval and limited

¹⁴⁶ 79 FR 28650, 28652 and n. 5 (May 19, 2014).

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

disapproval of Rule 9610 on April 9, 2015, thereby making its requirements and procedures enforceable by the EPA or citizens against the District.¹⁴⁹

As part of our proposed action on the 2012 PM_{2.5} Plan, we listed SJVUAPCD Rule 9610 among the District's rule amendment commitments¹⁵⁰ and explained that the District had committed to adopt, submit, and implement Rule 9610 to “provide a *process* for quantifying emissions reductions from the use of incentive funds.”¹⁵¹ To the extent our proposed rule suggested that SJVUAPCD Rule 9610 may itself be a SIP-creditable control measure, we hereby clarify that this rule does not achieve any SIP-creditable emission reductions and therefore cannot be credited for any SIP purpose.

Additionally, to the extent Earthjustice intended to assert that emissions reductions achieved through a state or local incentive program cannot be credited in a SIP except through a SIP submission that satisfies the requirement of the Act as interpreted in EPA guidance, we agree. As we explained in our final action on SJVUAPCD Rule 9610:

We expect the District to address the applicable requirements of the CAA in each individual SIP submittal that relies on incentive programs, and our recommendations in both the proposal and today's final rule are intended to provide the District with general guidance on how these requirements, as interpreted in EPA guidance, apply to future SIP submittals developed pursuant to Rule 9610 and the requirements of the Act.... EPA will review each SIP submittal developed pursuant to Rule 9610 (including the necessary evaluation of the applicable incentive program guidelines) on a case-by-case basis, following

¹⁴⁹ 80 FR 19020 (April 9, 2015) (concluding that Rule 9610 largely satisfies CAA requirements but contains several deficiencies warranting limited disapproval).

¹⁵⁰ 80 FR 1816 at 1827 (Table 2), 1832 (Table 3).

¹⁵¹ 80 FR 1816, 1831 (emphasis added).

notice-and-comment rulemaking, to determine whether the applicable requirements of the Act are met [*internal citations omitted*]. Nothing in today's action prohibits EPA from disapproving a SIP relying on incentive-based emission reductions that fails to satisfy the requirements of the CAA.¹⁵²

With respect to Earthjustice's statement that "[t]he requirement to reduce emissions in exchange for incentive funding is not enshrined in any sort of control measure that is included in the [SIP] and enforceable by EPA or citizens," we note that under longstanding EPA guidance, SIP credit may be allowed for a voluntary or other nontraditional measure only where the State submits enforceable mechanisms to ensure that the emission reductions necessary to meet applicable CAA requirements are achieved—e.g., an enforceable commitment to monitor and report on emission reductions achieved and to rectify any shortfall in a timely manner.¹⁵³ Thus, if California intends to satisfy a SIP requirement through reliance on an incentive program that the EPA and citizens may not directly enforce against participating sources, the State/District must take responsibility for assuring that SIP emission reduction requirements are met through an enforceable commitment, which the EPA and citizens may enforce against the State/District upon the EPA's approval of the commitment into the SIP.¹⁵⁴ Approval of a control strategy built upon emission reductions achieved through incentive programs may satisfy CAA section 110(a)(2)(A) only if these enforceability requirements are met.¹⁵⁵

¹⁵² 80 FR 19020, 19022 (April 9, 2015).

¹⁵³ *Id.* at 19026.

¹⁵⁴ *Id.*

¹⁵⁵ The EPA has recommended presumptive limits on the amounts of emission reductions from certain voluntary and other nontraditional measures that may be credited in a SIP. Specifically, for voluntary mobile source emission reduction programs (VMEPs), the EPA has identified a presumptive limit of three percent (3%) of the total projected future year emission reductions required to attain the appropriate NAAQS, and for any particular SIP submittal to demonstrate attainment or maintenance of the NAAQS or

D. Comments on RFP, RFP Contingency Measures, and Quantitative Milestones

Comment 13: Earthjustice disagrees with the EPA's proposal to approve the RFP demonstration in the Plan, quoting the statutory definition of "reasonable further progress" in CAA section 171(1) and asserting that the EPA's approach to RFP "divorces the RFP targets from attainment altogether by claiming that the RFP requirement of CAA section 172(c)(2) can be met by assuring implementation of RACM/RACT." Earthjustice asserts that RFP is a requirement separate and independent from RACM/RACT and that the EPA's approach undermines Congress' intent for RFP and milestones to serve as enforceable targets that will trigger consequences when RACM/RACT controls are not implemented on a particular schedule.

Earthjustice also states that the Plan's RACM/RACT demonstration cannot support the RFP targets approved by the EPA because it is incomplete, particularly for ammonia. According to Earthjustice, the ammonia RACM/RACT demonstration sets no RACM/RACT requirements and therefore makes it impossible to assess whether the Plan will achieve RFP. Further, Earthjustice says, because the Plan allows ammonia emissions to increase after 2012, it does not provide "annual incremental *reductions*" (emphasis in

progress toward attainment (e.g., RFP), 3% of the specific statutory requirement. *See, e.g.*, "Guidance on Incorporating Voluntary Mobile Source Emission Reduction Programs in State Implementation Plans (SIPs)," EPA, Office of Air and Radiation (OAR), October 24, 1997, at 5 and "Improving Air Quality with Economic Incentive Programs," EPA, OAR, January 2001, at 158. For voluntary stationary and area source measures, the EPA has identified a presumptive limit of 6% of the total amount of emission reductions required for RFP, attainment, or maintenance demonstration purposes. *See, e.g.*, "Incorporating Emerging and Voluntary Measures in a State Implementation Plan," EPA, OAR, September 2004 ("2004 Emerging and Voluntary Measures Guidance") at 9 and "Incorporating Bundled Measures in a State Implementation Plan (SIP)," August 2005 ("2005 Bundled Measures Guidance"), at 8. The EPA has also long stated, however, that states may justify higher amounts of SIP emission reduction credit for voluntary programs on a case-by-case basis, and that the EPA may approve measures for SIP credit in excess of the presumptive limits "where a clear and convincing justification is made by the State as to why a higher limit should apply in [its] case." 2004 Emerging and Voluntary Measures Guidance at 9; *see also* 2005 Bundled Measures Guidance at 8, n. 6 and "Diesel Retrofits: Quantifying and Using Their Emission Benefits in SIPs and Conformity," EPA, OTAQ, February 2014, at 12.

comment) as required by CAA section 171. Earthjustice states that the EPA must disapprove the RFP demonstration because it has no basis for concluding that the Plan will provide such annual incremental reductions in emissions of the relevant air pollutant as are required for the purpose of ensuring attainment by the applicable date.

Response 13: We disagree with the commenter's assertion that the EPA's approach to RFP in this action is inconsistent with the statutory RFP requirements.

Section 172(c)(2) of the Act requires that plan provisions for all PM_{2.5} nonattainment areas require RFP, which is defined in section 171(1) as such annual incremental reductions in emissions of the relevant air pollutant as are required by part D, title I of the Act or may reasonably be required by the Administrator for the purpose of ensuring attainment of the applicable NAAQS by the applicable date. In the EPA's July 29, 2016 final rule to implement the PM_{2.5} NAAQS, the EPA explained that for areas that cannot demonstrate attainment by the statutory deadline for Moderate areas in CAA section 188(c)(1), the state must demonstrate either generally linear or stepwise emissions reductions toward the full amount of reductions that will be achieved by that deadline, i.e., the amount that reflects implementation of all of the control measures identified as RACM and RACT and additional reasonable measures for the entire period of the applicable attainment plan.¹⁵⁶ The EPA explained that generally linear progress toward this full amount would meet the RFP requirement, while slower progress would require further justification.¹⁵⁷

¹⁵⁶ EPA, Final Rule, "Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements," July 29, 2016 (pre-publication notice) at pp. 178-179.

¹⁵⁷ *Id.*

As we explained in our proposed rule, the 2012 PM_{2.5} Plan shows that emissions of direct PM_{2.5}, NO_x and SO_x will decline from the 2007 base year through 2015 and states that emissions will remain below the levels needed to show “generally linear progress” from 2007 to 2019, the year that the Plan projects to be the earliest practicable attainment date.¹⁵⁸ The Plan also demonstrates that all RACM/RACT and additional reasonable measures for sources of direct PM_{2.5}, NO_x, SO_x and ammonia are being implemented as expeditiously as practicable¹⁵⁹ and identifies projected emission levels for each of these pollutants in 2014 and 2017 that reflect full implementation of the State’s and District’s Moderate area control strategy for the area.¹⁶⁰ In an area that cannot practicably attain the PM_{2.5} NAAQS by the applicable Moderate area attainment date, we believe it is reasonable to find that full implementation of a control strategy that satisfies the Moderate area control requirements (i.e., RACM/RACT and additional reasonable measures) represents reasonable further progress toward attainment.

We also disagree with the commenter’s claim that the Plan’s RACM/RACT demonstration for ammonia cannot support the RFP targets approved by the EPA because it is incomplete and lacks any RACM/RACT requirements. For the reasons provided above in Response 6 through Response 10, we find the RACM/RACT demonstration in the 2012 PM_{2.5} Plan consistent with the statutory requirement for RACM/RACT in CAA section 189(a)(1)(C).

¹⁵⁸ 80 FR 1816, 1835 (January 13, 2015) (citing 2012 PM_{2.5} Plan, section 9.3).

¹⁵⁹ As explained in Response 12b, *supra*, we are approving the District’s commitment in the 2012 PM_{2.5} Plan to adopt Rule 4905 in 2014 as an additional reasonable measure under CAA section 172(c)(6) because it is a control measure implemented after the RACM implementation deadline (December 14, 2013) but before the Moderate area attainment date (December 31, 2015).

¹⁶⁰ *Id.* at 1835, 1836.

Finally, we disagree with Earthjustice's claim that the Plan fails to satisfy the RFP requirement because it allows ammonia emissions to increase after 2012 and, therefore, does not provide annual incremental reductions as required by CAA section 171. As the EPA explained in the preamble to the July 29, 2016 final rule to implement the PM_{2.5} NAAQS, states may in certain circumstances develop approvable RFP plans in which emissions of one or more PM_{2.5} precursors subject to control evaluation are not decreasing. The EPA explained that in this scenario:

... the state must demonstrate that the emissions reductions of direct PM_{2.5} combined with the aggregate emissions reductions of PM_{2.5} plan precursors support expeditious attainment of the applicable PM_{2.5} NAAQS. To accomplish this, the EPA expects that a state could use the relative air quality impacts of the different PM_{2.5} plan precursors identified in the attainment modeling to demonstrate that the emissions reductions of direct PM_{2.5} and aggregate PM_{2.5} plan precursors constitute an acceptable RFP plan. For example, the state could demonstrate that even if one or more PM_{2.5} plan precursor is not decreasing, the emissions reductions of direct PM_{2.5} and the remaining PM_{2.5} plan precursors are the dominant factors in reducing ambient PM_{2.5} levels and are therefore adequate to support expeditious attainment. In providing this flexibility, the EPA recognizes that control measures for certain pollutants may be more effective at reducing PM_{2.5} concentrations than others, and that states may be able to

implement some measures more quickly than others while still achieving reasonable overall progress toward attainment.¹⁶¹

Consistent with these recommendations, the 2012 PM_{2.5} Plan demonstrates that despite the increase in ammonia emissions after 2012, the reductions in emissions of direct PM_{2.5}, NO_x and SO_x are the dominant factors in reducing ambient PM_{2.5} levels and are therefore adequate to support expeditious attainment.¹⁶² Because the Plan provides for generally linear reductions in emissions of direct PM_{2.5} and PM_{2.5} precursors in the aggregate, we find that it provides for such annual incremental reductions in emissions of the relevant air pollutant as are required by part D, title I of the Act or may reasonably be required by the Administrator for the purpose of ensuring attainment of the applicable NAAQS by the applicable date.

As a result of our December 22, 2015 action reclassifying the SJV area as a Serious nonattainment area for the 2006 PM_{2.5} NAAQS, the area is now subject to Serious area planning requirements under subpart 4 and must reevaluate and strengthen its SIP control strategy as necessary to meet the Serious area requirement for BACM and BACT, among other requirements.¹⁶³ The State must also demonstrate attainment as expeditiously as practicable, but no later than December 31, 2019, and provide a revised RFP demonstration, both taking into consideration the implementation of the Serious Area control strategy.¹⁶⁴ Today, we are approving certain elements of the 2012 PM_{2.5} Plan only for the limited purpose of satisfying the statutory control requirements that

¹⁶¹ EPA, Final Rule, “Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements,” July 29, 2016 (pre-publication notice) at p. 179.

¹⁶² 80 FR 1816, 1835-1836 (January 13, 2015).

¹⁶³ 81 FR 2993 (January 20, 2016) (final rule) and 81 FR 42263 (June 29, 2016) (correcting amendment).

¹⁶⁴ *Id.*

apply to Moderate areas demonstrating that attainment by the Moderate Area attainment date under subpart 4 is impracticable.

Comment 14: Earthjustice asserts that the EPA does not have authority to defer action on quantitative milestones and RFP contingency measures. Earthjustice notes that the EPA has deemed the District's SIP revision complete and asserts that the EPA is under a mandatory duty as a result to take one of the actions enumerated in CAA section 110(k). Earthjustice contends that disapproval of the quantitative milestones and RFP contingency measures is the only reasonable option. According to Earthjustice, deferring action on these parts effectively waives the statutory consequences for failing to submit a complete plan, including sanctions, and leaves the District with "no actual plan for attaining the PM_{2.5} standards." Earthjustice says that interim milestones and RFP targets will be needed to ensure progress before the District's next attainment plan is adopted.

Response 14: These comments are outside the scope of this action. We did not propose any action concerning quantitative milestones or RFP contingency measures in the Plan and, therefore, are not finalizing any action with respect to these requirements at this time.

For all areas designated nonattainment for the 2006 PM_{2.5} NAAQS effective December 14, 2009, including the SJV area, the EPA has established December 31, 2014 as the starting point for the first 3-year period for quantitative milestones under CAA section 189(c).¹⁶⁵ This is because December 31, 2014, was the due date for states to submit additional SIP elements necessary to satisfy the subpart 4 Moderate area

¹⁶⁵ See EPA, Final Rule, "Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements," July 29, 2016 (pre-publication notice) at 40 CFR 51.1013(a)(4). Although this regulatory text is not yet effective, it reflects the EPA's interpretation of the statutory requirements.

requirements for the 1997 and 2006 PM_{2.5} standards.¹⁶⁶ Establishing December 31, 2014 as the starting point for the first 3-year period under CAA section 189(c) for the 2006 PM_{2.5} NAAQS is in keeping with the EPA's historical approach to quantitative milestone dates (*i.e.*, using the due date for the Moderate area plan submission as the starting point for the first 3-year milestone period). Thus, for the SJV PM_{2.5} Serious nonattainment area, the state must submit quantitative milestones to be achieved by December 31, 2017 (the first milestone date) and every 3 years thereafter until the milestone date that falls within 3 years after the Serious area attainment date.¹⁶⁷

With respect to RFP contingency measures, we explained in our proposed rule that once the SJV area is reclassified as a Serious area, the State would be obligated to demonstrate that the SIP provides for the implementation of BACM and BACT and for attainment as expeditiously as practicable, and no later than 2019.¹⁶⁸ We also noted that as part of this demonstration, the State would need to revise its RFP demonstration to establish new RFP targets, quantitative milestones, and RFP contingency measures for the 2006 PM_{2.5} NAAQS. As a consequence of our January 20, 2016 final action reclassifying the SJV area as a Serious area for the 2006 PM_{2.5} NAAQS, California is subject to an August 21, 2017 deadline to submit these Serious area plan elements.¹⁶⁹

¹⁶⁶ EPA, Final Rule, "Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements," July 29, 2016 (pre-publication notice) at p. 203 (referencing 79 FR 31566 (June 2, 2014) (final rule establishing subpart 4 moderate area classifications and deadline for related SIP submissions)); *see also* 80 FR 1816, 1835 (January 13, 2015).

¹⁶⁷ *See* EPA, Final Rule, "Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements," July 29, 2016 (pre-publication notice) at 40 CFR 51.1013(a)(4). Although this regulatory text is not yet effective, it reflects the EPA's interpretation of the statutory requirements.

¹⁶⁸ 80 FR 1816, 1837 (January 13, 2015).

¹⁶⁹ 81 FR 2993, 3000 (January 20, 2016) and 40 CFR 52.247(e).

Following the State's submission of a Serious area plan to provide for attainment of the 2006 PM_{2.5} NAAQS in the SJV area, the EPA intends to review the submitted plan for compliance with these requirements for quantitative milestones and RFP contingency measures.

E. Comments Regarding Interpollutant Trading Ratios for NNSR

Comment 15: The SJVUAPCD disagrees with the EPA's proposal to disapprove the District's NNSR interpollutant trading (IPT) ratios to offset PM_{2.5} emission increases with NO_x and SO_x emissions reductions. The District asserts that its use of a single IPT ratio for each pollutant based on the average of different calculated ratios across the District is simpler and more equitable than the EPA's suggestion that ratios should either differ across the regions of the SJV or be set based on a maximum calculated value for any point in the SJV. The District believes the EPA's suggested geographically-based ratios would be unfair, since the ratio used for a particular source could depend on which side of the road it is located on.

The SJVUAPCD further asserts that the District's reliance on the use of a basin-wide average for each pollutant is consistent with the EPA's NNSR regulations at 40 CFR part 51, Appendix S, as well as prior EPA approvals of NNSR programs that mitigate emission increases across an air basin. The District also states that it models local impacts of increased PM_{2.5} emissions for every facility subject to NNSR and will not issue a permit to a facility if the modeled impacts indicate a significant health risk or a significant increase in PM_{2.5} emissions. The SJVUAPCD concludes that its NNSR modeling analysis and proposed IPT ratios prevent localized impacts and appropriately offset regional impacts, and that the EPA should therefore approve the ratios.

Response 15: We disagree with the District's assertion that the EPA should approve the NNSR IPT ratios in the 2012 PM_{2.5} Plan. Our primary concern regarding the District's approach to interpollutant trading for NSR purposes is that the Plan provided only a ratio calculation, without a rationale to support the use of this ratio for NNSR purposes. Under section IV.G.5 of 40 CFR part 51, Appendix S, interpollutant trades to meet NNSR offset requirements for emissions of direct PM_{2.5} or PM_{2.5} precursors may be allowed if such offsets comply with an interprecursor trading hierarchy and ratio approved by the Administrator. As stated in our proposal, the EPA issued a 2011 guidance memorandum on interpollutant trading stating that "any ratio involving PM_{2.5} precursors submitted to the EPA for approval for use in a state's interpollutant offset program for PM_{2.5} nonattainment areas must be accompanied by a technical demonstration that shows the net air quality benefits of such ratio for the PM_{2.5} nonattainment area in which it will be applied."¹⁷⁰ Therefore, a PM_{2.5} NNSR SIP submittal containing interpollutant trading ratios for use in NNSR offsetting must describe a method for calculating ratios and provide a rationale demonstrating that the method is consistent with the purpose of NNSR offsets.

The EPA disagrees with the District's claim that the use of a single trading ratio, even the maximum ratio over an area, is necessarily more equitable or less complex than using multiple ratios. While the use of a single interpollutant trading ratio for all locations in a nonattainment area may be simpler than separate ratios for different geographic zones, the District has provided no rationale concerning the net air quality benefits of

¹⁷⁰ Memorandum dated July 21, 2011, from Gina McCarthy, Assistant Administrator, to Regional Air Division Directors, Regions 1–10, Subject: Revised Policy to Address Reconsideration of Interpollutant Trading Provisions for Fine Particles (PM_{2.5}) ("IPT memo").

such an approach. The impact of emissions of a given pollutant varies by the chemical environment the emissions occur in, and that chemical environment varies by location. The ratio of impacts between emissions of NO_x and SO_x precursors will also necessarily vary by geographic location. The importance of that impact for total concentration is another consideration; emissions from a remote, relatively clean area used to offset emissions in a highly polluted area may not meet the requirement in Condition 3 of 40 CFR part 51, Appendix S, section IV.A, which states that offsets from existing sources in the area of the proposed source are required such that there will be reasonable progress toward attainment of the applicable NAAQS. The use of a ratio that is an average over a broad geographic area, or any ratio less than the maximum ratio for such an area, could allow for a new source whose location-specific modeling gives the maximum ratio to obtain a permit without offsetting its full impact and, thus, potentially interfere with progress toward attainment.

The District suggests that the use of the maximum ratio poses an equity problem for a source whose location-specific ratio is lower, as such a source would have to offset more than it should. However, the use of an average ratio across the entire nonattainment area poses a different equity problem: a source whose location-specific ratio is the maximum would be offsetting less than it should while other sources would have to offset more. Use of different ratios tailored to specific geographic zones would be one way to help address these issues. Although the District correctly notes that a source located to one side of a zone boundary may have a different ratio than one located just to the other side of the boundary, creating potential inequities, we believe such an approach is generally more appropriate and equitable as sources in each zone would offset

approximately their fair share. In any case, the EPA will review each technical demonstration accompanying an NNSR SIP submission to determine whether the state's requested interpollutant trading ratio(s) will achieve a net air quality benefit in the PM_{2.5} nonattainment area.

Comment 16: The SJVUAPCD disagrees with the EPA's proposal to disapprove the District's interpollutant trading ratio sensitivity calculation based on a 50 percent reduction in stationary source emissions. The District comments that the EPA has provided only limited guidance on the development of interpollutant trading ratios and has failed to propose a mechanism to determine the sensitivity of PM_{2.5} formation to NO_x and SO_x emission decreases for NNSR, even though, according to the District, federal law requires the EPA to do so. The District asserts that its method is consistent with the EPA's existing guidance on NNSR IPT ratios and with state techniques that the EPA has approved for attainment demonstration purposes. The District contends that the EPA's disapproval of its approach creates new standards not reflected in previous guidance, and that the EPA should establish new standards only through the proper regulatory approval process. The District states that the EPA should therefore approve its 50 percent reduction sensitivity approach.

Response 16: Although it may be reasonable to use modeling of 50 percent reductions in calculating interpollutant trading ratios,¹⁷¹ consistent with the provisions of 40 CFR part 51, Appendix S and EPA guidance, the state must provide a rationale for the reduction used and demonstrate its appropriateness for NSR offsetting purposes. As we stated in our proposed rule, the Plan provides no rationale for the appropriateness of a 50 percent

¹⁷¹ We note, however, that such a level of reduction does not match the scale of reductions involved in a typical NNSR offsetting transaction.

reduction. Generally, the emission reductions model should have a direct connection to the emission reductions expected in IPT trades for NSR offsetting.

Comment 17: The District disagrees with the EPA's general comment that the Plan fails to provide an overall rationale for the District's methodology that is grounded in the statutory purpose of NSR offsets, and also with the EPA's specific concern that the 2012 PM_{2.5} Plan does not show that its offsets provide a "net air quality benefit in the affected area," as required by 40 CFR part 51, Appendix S, section IV.A. The District asserts that Appendix H of the Plan demonstrates that the Plan's interpollutant trading ratios are consistent with the federal NNSR requirements and that the use of credits would not interfere with attainment efforts. The District states that the proposed trading ratios substitute only one precursor pollutant to the current offsetting requirements that the EPA has already found "to comply with the CAA and EPA's NSR implementation regulations," and that this substitution uses a predetermined ratio demonstrated to be equal in ability to offset PM_{2.5}. For this reason, the District argues that the ratios have already been demonstrated to provide an air quality benefit to the area and should be approved.

Response 17: The EPA disagrees with the District's claim that the Plan demonstrates that its proposed interpollutant offsets would not interfere with attainment efforts, and that its ratio represents equivalent PM_{2.5} offsetting impacts. As we explained above in Response 15 concerning location-specific ratios, depending on the locations of the new or modified sources and the offsetting sources, offsets based on interpollutant trades could interfere with progress toward attainment of the PM_{2.5} NAAQS. The District used modeling of emission reductions occurring over a large geographic area and calculated ratios of the

effects at multiple monitor locations, without providing a rationale for the procedure used. The modeling reflects the average response of geographically distributed emission reductions but does not show the effect of any particular offset for a new source, and it is unclear how it is related to the aggregate effect of many such trades. Because the 2012 PM_{2.5} Plan does not address the locations of either the PM_{2.5} precursor emission increases and offsets or the ambient PM_{2.5} effects, we find the technical analyses in the Plan insufficient to demonstrate that the District's proposed offset ratio will assure reasonable progress toward attainment of the PM_{2.5} NAAQS in the SJV.

F. Comments on Motor Vehicle Emissions Budgets

Comment 18: Earthjustice agrees with the EPA's proposal to disapprove the interpollutant trading ratios for NSR but argues that the EPA should also disapprove the District's 8:1 ratio for offsetting mobile source emission increases of PM_{2.5} for conformity purposes. Earthjustice claims that the EPA did not evaluate the methodology supporting this ratio and instead approved it on the basis that it was more stringent than regional modeling determinations. According to Earthjustice, given the EPA concluded that the regional modeling was arbitrary and lacked any rationale for its methodology, the mere fact that the conformity ratios are "more stringent" does not provide the EPA with any rational basis for approving an 8:1 ratio for conformity purposes.

Response 18: The EPA disagrees with Earthjustice's claim that the 8:1 NO_x:direct PM_{2.5} ratio for transportation conformity has no rational basis. As an initial matter, we note that the EPA did not state that the regional modeling was arbitrary, but rather that the Plan had not provided a rationale for its particular approach to using modeled sensitivity ratios

to derive IPT ratios for NSR offsetting purposes.¹⁷² The EPA made these statements in the context of NNSR permitting requirements, not trading mechanisms for transportation conformity purposes.

The District's methodology for estimating the IPT ratio for conformity purposes is essentially an update (based on newer modeling) of the approach that the EPA previously approved for the 2008 PM_{2.5} Plan for the 1997 PM_{2.5} NAAQS in the SJV.¹⁷³ The District's approach in the 2008 PM_{2.5} Plan was to model the ambient PM_{2.5} effect of areawide NO_x emissions reductions and of areawide direct PM_{2.5} reductions, and to express the ratio of these modeled sensitivities as an interpollutant trading ratio. Variable factors in this method included the extent of the area over which emission reductions were applied and the location(s) at which the resulting ambient PM_{2.5} effect was evaluated. As part of the EPA's November 2011 action partially approving the 2008 PM_{2.5} Plan for the 1997 PM_{2.5} NAAQS in the SJV, the EPA stated that this methodology "is adequate for purposes of assessing the effect of area-wide emissions changes, such as are used in RFP, contingency measures, and conformity budgets."¹⁷⁴ In the TSD supporting that action, we stated that "[t]he method modeled 'across the board' emission changes over the entire modeling domain; emissions considered in transportation conformity are also domain-wide."¹⁷⁵

As part of our proposed action on the 2012 PM_{2.5} Plan, we stated that the areawide methodology used in the 2008 PM_{2.5} Plan gave a range of IPT ratios from 2.8 to

¹⁷² 80 FR 1816, 1838 (January 13, 2015).

¹⁷³ See 80 FR 1816, 1841 (January 13, 2015) (noting the EPA's prior approval of MVEBs for the 1997 annual and 24-hour PM_{2.5} standards in the 2008 PM_{2.5} Plan at 76 FR 69896, November 9, 2011).

¹⁷⁴ 76 FR 69896, 69919 (November 9, 2011).

¹⁷⁵ EPA, Region 9, Air Division, "Technical Support Document and Responses to Comments, Final Rule on the San Joaquin Valley 2008 PM_{2.5} State Implementation Plan," September 30, 2011, at pp. 46 and 165.

4.7, depending on the ambient location chosen.¹⁷⁶ Using the same method would entail using the IPT ratio evaluated at the California Street, Bakersfield design value site, 4:3. The 8:1 ratio used in the Plan is larger than both the Bakersfield ratio and any ratio using variants of the previously-approved approach, and is thus a more stringent (and conservatively high) trading mechanism to use for estimating the NO_x reductions needed to offset PM_{2.5} increases.¹⁷⁷ We are approving the 8:1 trading ratio for transportation conformity purposes because it is significantly more stringent than any of the other ratios calculated in the Plan for different locations in the SJV, all of which were calculated using a methodology that the EPA previously approved for transportation conformity purposes in the SJV.

Comment 19: Earthjustice comments that the EPA's conformity regulations require MVEB to be consistent with the requirements for RFP. Earthjustice argues that because the RFP demonstration is not approvable, the EPA also should not approve the MVEBs.

Response 19: We disagree with Earthjustice's claim that the EPA should disapprove the MVEBs in the Plan.

As we explained above in Response 13, we are approving the RFP demonstration in the 2012 PM_{2.5} Plan based on our conclusion that it provides for generally linear reductions in emissions of direct PM_{2.5} and PM_{2.5} precursors in the aggregate and, therefore, provides for such annual incremental reductions in emissions of the relevant air pollutant as are required by part D, title I of the Act or may reasonably be required by the

¹⁷⁶ The maximum ratio for the 1st Street location in Fresno was actually 5:2, based on emission reduction sensitivities for NO_x and for direct PM in the State's Weight of Evidence Analysis, Appendix G to the 2012 PM_{2.5} Plan, Table 7, p.G-65.

¹⁷⁷ The Bakersfield ratio is based on values in "Table 7. Modeled PM_{2.5} air quality benefit per ton of valley wide precursor emission reductions", 2012 PM_{2.5} Plan, Appendix G, p. 65.

Administrator for the purpose of ensuring attainment of the 2006 PM_{2.5} NAAQS by the applicable attainment date.

The 2012 PM_{2.5} Plan contains 2014 and 2017 MVEBs for emissions of direct PM_{2.5} and NO_x. We proposed to approve these budgets based on a conclusion that they are consistent with applicable requirements for RFP, are clearly identified and precisely quantified, and meet all other applicable statutory and regulatory requirements including the adequacy criteria in 40 CFR section 93.118(e)(4).¹⁷⁸ Additionally, in accordance with 40 CFR section 93.102(b)(2)(v), we proposed to find that on-road emissions of VOCs, SO₂ and ammonia are not significant contributors to the PM_{2.5} nonattainment problem in the SJV area, and accordingly, that transportation conformity requirements do not apply for these pollutants in this area.¹⁷⁹ In April 2016, the EPA found the direct PM_{2.5} and NO_x MVEBs in the Plan, as submitted December 29, 2014, adequate for transportation conformity purposes.¹⁸⁰ On November 13, 2015, the State submitted revised direct PM_{2.5} and NO_x budgets based on EMFAC2014 for the 2006 PM_{2.5} NAAQS. The EPA proposed to approve these revised budgets based on our conclusion that the 2012 PM_{2.5} Plan continues to meet applicable requirements for RFP in 2017 when the EMFAC2011-based budgets are replaced with the new EMFAC2014-based budgets and that these budgets are clearly identified, precisely quantified, and meet all of the other criteria in 40 CFR section 93.118(e)(4).¹⁸¹

¹⁷⁸ 80 FR 1816, 1840 (January 13, 2015).

¹⁷⁹ *Id.*

¹⁸⁰ Letter dated April 1, 2016, from Deborah Jordan, Director, Air Division, EPA, to Richard W. Corey, Executive Officer, California Air Resources Board, and 81 FR 22194 (April 15, 2016).

¹⁸¹ 81 FR 31212, 31218 (May 18, 2016).

The commenter has not identified any information that compels us to reconsider our conclusion that the MVEBs in the 2012 PM_{2.5} Plan are consistent with applicable requirements for reasonable further progress. Therefore, we are approving the 2017 MVEBs for direct PM_{2.5} and NO_x, as submitted November 13, 2015.¹⁸²

We note that, because the provisions of 40 CFR part 93, subpart A, apply only with respect to emissions of NO_x and direct PM_{2.5} for purposes of the 2006 PM_{2.5} NAAQS in the SJV area, the commenter's arguments about ammonia emissions are not germane to our action on these MVEBs.

G. Other Comments

Comment 20: Earthjustice asserts that the EPA has no basis for deferring action on the NSR component of the Plan and that deferral will put the EPA in violation of the statutory deadlines under CAA section 110(k)(2). Earthjustice states that the District's NSR program does not meet all subpart 4 requirements because it does not regulate ammonia, which according to Earthjustice is required under CAA section 189(e).

Response 20: These comments are outside the scope of this action. We did not propose any action on the portions of the 2014 Supplement that address NNSR requirements for PM_{2.5} in the SJV and, therefore, are not finalizing any action with respect to these Plan elements at this time. The EPA intends to act on these components of the Plan through a separate rulemaking.

We note that as a consequence of the EPA's January 20, 2016 final action reclassifying the SJV area as a Serious nonattainment area for the 2006 PM_{2.5} NAAQS, California is subject to a February 21, 2017 deadline to submit NNSR rule revisions for

¹⁸² Although the 2012 PM_{2.5} Plan contained MVEBs for both 2014 and 2017, MVEBs for 2014 are no longer relevant for conformity analyses since that year has passed.

the SJV that satisfy the requirements of sections 189(b)(3) and 189(e) and all other applicable requirements of the CAA for implementation of the 2006 PM_{2.5} NAAQS.¹⁸³ These SIP revisions must appropriately address the NNSR requirements for direct PM_{2.5} and all PM_{2.5} precursors, including ammonia.

III. Final Action

The EPA is taking final action to approve elements of the following SIP revisions submitted by California to address Clean Air Act requirements for implementation of the 2006 PM_{2.5} NAAQS in the SJV: the 2012 PM_{2.5} Plan, submitted March 4, 2013; the 2014 Supplement, submitted November 6, 2014; and the motor vehicle emissions budgets for direct PM_{2.5} and NO_x, as submitted November 13, 2015.

Specifically, under CAA section 110(k)(3), the EPA is proposing to approve the following elements of the 2012 PM_{2.5} Plan and 2014 Supplement:

1. the 2007 base year emissions inventories as meeting the requirements of CAA section 172(c)(3);
2. the demonstration that attainment by the Moderate area attainment date of December 31, 2015 is impracticable as meeting the requirements of CAA section 189(a)(1)(B)(ii);
3. the reasonably available control measures/reasonably available control technology demonstration as meeting the requirements of CAA sections 172(c)(1) and 189(a)(1)(C);
4. the reasonable further progress demonstration as meeting the requirements of CAA section 172(c)(2); and

¹⁸³ 81 FR 2993, 3000 (January 20, 2016) and 40 CFR section 52.245(e).

5. SJVUAPCD's commitments to adopt and implement specific rules and measures by the dates specified in Chapter 5 of the 2012 PM_{2.5} Plan to achieve the emissions reductions shown therein, and to submit these rules and measures to CARB within 30 days of adoption for transmittal to the EPA as a revision to the SIP, or if the total emission reductions from the adopted rules are less than those committed to in the Plan, to adopt, submit, and implement substitute rules that will achieve equivalent reductions in emissions of direct PM_{2.5} or PM_{2.5} precursors in the same adoption and implementation timeframes or in the timeframes needed to meet CAA milestones, as stated on p. 4 of SJVUAPCD Governing Board Resolution 12-12-19, dated December 20, 2012, "In the Matter of Adopting the San Joaquin Valley Unified Air Pollution Control District 2012 PM_{2.5} Plan."

In addition, the EPA is approving the 2017 NO_x and PM_{2.5} motor vehicle emissions budgets submitted November 13, 2015,¹⁸⁴ as shown in Table 1 above, because they are derived from an approvable RFP demonstration and meet the applicable requirements of CAA section 176(c) and 40 CFR part 93, subpart A. We are also approving, in accordance with 40 CFR section 93.124, the trading mechanism described on p. C-32 in Appendix C of the 2012 PM_{2.5} Plan as an enforceable component of the transportation conformity program for the 2006 PM_{2.5} NAAQS in the SJV, with the condition that the trades are limited to substituting excess reductions in NO_x for increases in PM_{2.5}. The budgets that the EPA is approving herein relate to the 2006 PM_{2.5} NAAQS only, and our approval of them does not affect the status of the previously-approved

¹⁸⁴ See letter dated November 13, 2015, from Richard W. Corey, Executive Officer, CARB to Jared Blumenfeld, Regional Administrator, EPA Region 9, with enclosures.

MVEBs for the 1997 PM_{2.5} NAAQS and related trading mechanism, which remain in effect for that PM_{2.5} NAAQS.

The EPA is disapproving the PM_{2.5} interpollutant trading ratios provided in Appendix H of the 2012 PM_{2.5} Plan for NNSR permitting purposes. Under section 179(a) of the CAA, final disapproval of a SIP submittal that addresses a requirement of part D, title I of the Act or is required in response to a finding of substantial inadequacy as described in CAA section 110(k)(5) (SIP Call) starts a sanctions clock. The NNSR interpollutant trading ratios provided in the 2012 PM_{2.5} Plan were not submitted to meet either of these requirements. Therefore, our final action to disapprove this component of the Plan does not trigger a sanctions clock. Disapproval of a SIP element also triggers the requirement under CAA section 110(c) for the EPA to promulgate a Federal Implementation Plan (FIP) no later than two years from the date of the disapproval unless the State corrects the deficiency, and the Administrator approves the plan or plan revision, before the Administrator promulgates such FIP. Disapproval of these NNSR interpollutant trading ratios, however, does not create any deficiency in the Plan, and therefore does not trigger the obligation on the EPA to promulgate a FIP under section 110(c).

IV. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at <http://www2.epa.gov/laws-regulations/laws-and-executive-orders>.

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was therefore not submitted to the Office of Management and Budget (OMB) for review.

B. Paperwork Reduction Act (PRA)

This action does not impose an information collection burden under the PRA because this action does not impose additional requirements beyond those imposed by state law.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action will not impose any requirements on small entities beyond those imposed by state law.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. This action does not impose additional requirements beyond those imposed by state law. Accordingly, no additional costs to State, local, or tribal governments, or to the private sector, will result from this action.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

F. Executive Order 13175: Coordination With Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175, because the SIP is not approved to apply on any Indian reservation land or in any other area where the EPA or an Indian tribe has demonstrated that a tribe has jurisdiction, and will not impose substantial direct costs on tribal governments or preempt tribal law. Thus, Executive Order 13175 does not apply to this action.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in section 2–202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not impose additional requirements beyond those imposed by state law.

H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act (NTTAA)

Section 12(d) of the NTTAA directs the EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. The EPA believes that this action is not subject to the requirements of section 12(d) of the NTTAA because application of those requirements would be inconsistent with the CAA.

*J. Executive Order 12898: Federal Actions To Address Environmental Justice in
Minority Populations and Low-Income Population*

The EPA lacks the discretionary authority to address environmental justice in this rulemaking.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a “major rule” as defined by 5 U.S.C. 804(2).

L. Petitions for Judicial Review

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by **[insert date 60 days after date of publication in the Federal Register]**. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this rule for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements (see section 307(b)(2)).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Ammonia, Incorporation by reference, Intergovernmental relations, Nitrogen dioxide, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Volatile organic compounds.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: August 16, 2016.

Alexis Strauss,
Acting Regional Administrator,
EPA Region 9.

Chapter I, title 40 of the Code of Federal Regulations is amended as follows:

PART 52 – APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart F—California

2. Section 52.220 is amended by adding paragraphs (c)(476)(ii)(A)(2), (c)(478), and (c)(479) to read as follows:

§ 52.220 Identification of plan – in part.

* * * * *

(c) * * *

(476) * * *

(ii) * * *

(A) * * *

(2) Attachment A to Resolution 15-50, “Updates to the Transportation Conformity Budgets for the San Joaquin Valley 2007 PM₁₀, 2007 Ozone and 2012 PM_{2.5} SIPs,” Table A-2 (Updated Transportation Conformity Budgets for the 2012 PM_{2.5} Plan (Tons per winter day).

* * * * *

(478) The following plan was submitted on March 4, 2013, by the Governor's Designee.

(i) [Reserved]

(ii) Additional materials.

(A) San Joaquin Valley Unified Air Pollution Control District.

(1) “2012 PM_{2.5} Plan” (dated December 20, 2012), adopted December 20, 2012, except for the motor vehicle emission budgets used for transportation conformity purposes.

(2) SJVUAPCD Governing Board Resolution No. 12-12-19, dated December 20, 2012, “In the Matter of Adopting the San Joaquin Valley Unified Air Pollution Control District 2012 PM_{2.5} Plan.”

(3) SJVUAPCD’s commitments to adopt and implement specific rules and measures by the dates specified in Chapter 5 of the 2012 PM_{2.5} Plan to achieve the emissions reductions shown therein, and to submit these rules and measures to CARB within 30 days of adoption for transmittal to EPA as a revision to the SIP, or if the total emission reductions from the adopted rules are less than those committed to in the Plan, to adopt, submit, and implement substitute rules that will achieve equivalent reductions in emissions of direct PM_{2.5} or PM_{2.5} precursors in the same adoption and implementation timeframes or in the timeframes needed to meet CAA milestones, as stated on p. 4 of SJVUAPCD Governing Board Resolution 12-12-19, dated December 20, 2012.

(B) California Air Resources Board.

(1) CARB Resolution 13-2, dated January 24, 2013, “San Joaquin Valley PM_{2.5} State Implementation Plan.”

(479) The following plan was submitted on November 6, 2014, by the Governor's Designee.

(i) [Reserved]

(ii) Additional materials.

(A) San Joaquin Valley Unified Air Pollution Control District.

(1) “Supplemental Document, Clean Air Act Subpart 4: The 2012 PM_{2.5} Plan for the 2006 PM_{2.5} Standard and District Rule 2201 (New and Modified Stationary Source Review)” (dated September 18, 2014), adopted September 18, 2014.

(2) SJVUAPCD Governing Board Resolution No. 14-09-01, dated September 18, 2014, “In the Matter of: Authorizing Submittal of “Supplemental Document for the 2012 PM_{2.5} Plan” to EPA.”

(B) California Air Resources Board.

(1) CARB Resolution 14-37, dated October 24, 2014, “Supplemental Document for the San Joaquin Valley 24-Hour PM_{2.5} State Implementation Plan.”

[FR Doc. 2016-20413 Filed: 8/30/2016 8:45 am; Publication Date: 8/31/2016]